

STATUS OF THE YUCCA MOUNTAIN PROJECT

HEARING
BEFORE THE
SUBCOMMITTEE ON ENERGY AND AIR QUALITY
OF THE
COMMITTEE ON ENERGY AND
COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED NINTH CONGRESS
SECOND SESSION

MARCH 15, 2006

Serial No. 109-71

Printed for the use of the Committee on Energy and Commerce



Available via the World Wide Web: <http://www.access.gpo.gov/congress/house>

U.S. GOVERNMENT PRINTING OFFICE

27-589PDF

WASHINGTON : 2006

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2250 Mail: Stop SSOP, Washington, DC 20402-0001

COMMITTEE ON ENERGY AND COMMERCE

JOE BARTON, Texas, *Chairman*

RALPH M. HALL, Texas	JOHN D. DINGELL, Michigan
MICHAEL BILIRAKIS, Florida	<i>Ranking Member</i>
<i>Vice Chairman</i>	HENRY A. WAXMAN, California
FRED UPTON, Michigan	EDWARD J. MARKEY, Massachusetts
CLIFF STEARNS, Florida	RICK BOUCHER, Virginia
PAUL E. GILLMOR, Ohio	EDOLPHUS TOWNS, New York
NATHAN DEAL, Georgia	FRANK PALLONE, JR., New Jersey
ED WHITFIELD, Kentucky	SHERROD BROWN, Ohio
CHARLIE NORWOOD, Georgia	BART GORDON, Tennessee
BARBARA CUBIN, Wyoming	BOBBY L. RUSH, Illinois
JOHN SHIMKUS, Illinois	ANNA G. ESHOO, California
HEATHER WILSON, New Mexico	BART STUPAK, Michigan
JOHN B. SHADEGG, Arizona	ELIOT L. ENGEL, New York
CHARLES W. "CHIP" PICKERING, Mississippi	ALBERT R. WYNN, Maryland
<i>Vice Chairman</i>	GENE GREEN, Texas
VITO FOSSELLA, New York	TED STRICKLAND, Ohio
ROY BLUNT, Missouri	DIANA DEGETTE, Colorado
STEVE BUYER, Indiana	LOIS CAPPS, California
GEORGE RADANOVICH, California	MIKE DOYLE, Pennsylvania
CHARLES F. BASS, New Hampshire	TOM ALLEN, Maine
JOSEPH R. PITTS, Pennsylvania	JIM DAVIS, Florida
MARY BONO, California	JAN SCHAKOWSKY, Illinois
GREG WALDEN, Oregon	HILDA L. SOLIS, California
LEE TERRY, Nebraska	CHARLES A. GONZALEZ, Texas
MIKE FERGUSON, New Jersey	JAY INSLEE, Washington
MIKE ROGERS, Michigan	TAMMY BALDWIN, Wisconsin
C.L. "BUTCH" OTTER, Idaho	MIKE ROSS, Arkansas
SUE MYRICK, North Carolina	
JOHN SULLIVAN, Oklahoma	
TIM MURPHY, Pennsylvania	
MICHAEL C. BURGESS, Texas	
MARSHA BLACKBURN, Tennessee	

BUD ALBRIGHT, *Staff Director*

DAVID CAVICKE, *General Counsel*

REID P. F. STUNTZ, *Minority Staff Director and Chief Counsel*

SUBCOMMITTEE ON ENERGY AND AIR QUALITY

RALPH M. HALL, Texas, *Chairman*

MICHAEL BILIRAKIS, Florida	RICK BOUCHER, Virginia
ED WHITFIELD, Kentucky	<i>Ranking Member</i>
CHARLIE NORWOOD, Georgia	MIKE ROSS, Arkansas
BARBARA CUBIN, Wyoming	HENRY A. WAXMAN, California
JOHN SHIMKUS, Illinois	EDWARD J. MARKEY, Massachusetts
HEATHER WILSON, New Mexico	ELIOT L. ENGEL, New York
JOHN B. SHADEGG, Arizona	ALBERT R. WYNN, Maryland
CHARLES W. "CHIP" PICKERING, Mississippi	GENE GREEN, Texas
VITO FOSSELLA, New York	TED STRICKLAND, Ohio
GEORGE RADANOVICH, California	LOIS CAPPS, California
MARY BONO, California	MIKE DOYLE, Pennsylvania
GREG WALDEN, Oregon	TOM ALLEN, Maine
MIKE ROGERS, Michigan	JIM DAVIS, Florida
C.L. "BUTCH" OTTER, Idaho	HILDA L. SOLIS, California
JOHN SULLIVAN, Oklahoma	CHARLES A. GONZALEZ, Texas
TIM MURPHY, Pennsylvania	JOHN D. DINGELL, Michigan
MICHAEL C. BURGESS, Texas	<i>(EX OFFICIO)</i>
JOE BARTON, Texas	
<i>(EX OFFICIO)</i>	

CONTENTS

	Page
Testimony of:	
Sell, Hon. Clay, Deputy Secretary, U.S. Department of Energy	15
Additional material submitted for the record:	
Sell, Hon. Clay, Deputy Secretary, U.S. Department of Energy, response for the record.....	33

STATUS OF THE YUCCA MOUNTAIN PROJECT

WEDNESDAY, MARCH 15, 2006

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON ENERGY AND AIR QUALITY,
Washington, DC.

The subcommittee met, pursuant to notice, at 3:00 p.m., in Room 2123 of the Rayburn House Office Building, Hon. Ralph Hall (chairman) presiding.

Members present: Representatives Hall, Shimkus, Otter, Sullivan, Burgess, Barton (ex officio), Boucher, Markey, Engel, Capps, Allen, and Dingell (ex officio).

Staff present: Annie Caputo, Professional Staff Member; Sue Sheridan, Minority Senior Counsel; Bruce Harris, Minority Professional Staff Member; and Peter Kielty, Legislative Clerk.

MR. HALL. It looks like everybody is here. All right, Mr. Boucher. All right, the subcommittee will come to order, and I would like to welcome Deputy Secretary Clay Sell to this committee. Without objection the subcommittee will proceed pursuant to Committee Rule 4E, which allows members the opportunity to defer opening statements for extra questioning time, if they would like. We would like that, and I am sure that the witness would like that. The Chair recognizes himself for an opening statement. First, I want to thank Ranking Member Rick Boucher, Chairman Barton, Ranking Member Dingell, and the full committee for their help in setting up this hearing.

Yucca Mountain is a very necessary solution for how to dispose of our Nation's nuclear waste. We can't allow this program to falter. We owe it to our children and to our grandchildren to live up to the commitment to build a safe and secure repository. Anything short of that, I think, shrinks our responsibility to future generations and forces them to cope with our failure and threatens the viability of nuclear energy to meet their energy needs. There are those who wouldn't object to that happening, that failure taking place, and we just absolutely have got to see that it does not take place.

It is also an issue of fairness, making sure that our constituents get what they pay for. Right now utility rate payers are paying into the Nuclear Waste Fund to build a repository for spent fuel disposal. However, taxpayers are beginning to shoulder the burden for DOE's

failure in accepting spent fuel for disposal. Of the more than 60 lawsuits against DOE for this delay, DOE has settled two and lost one. So far the cost to the taxpayer is around \$141 million over the last two years. These numbers are only going to increase as more of these lawsuits are resolved, potentially costing taxpayers as much as a half a billion dollars each year for waste that should already be stored in Yucca Mountain. This means that rate payers are paying for a service they haven't received and taxpayers are footing the bill for the delay.

Today's hearing is an opportunity for us to examine the problems facing Yucca Mountain. The Administration may propose legislation to solve some of these challenges, and I encourage my colleagues to use this hearing to gain a better understanding of the issue before us in preparation for possible legislative action.

[The prepared statement of Hon. Ralph Hall follows:]

PREPARED STATEMENT OF THE HON. RALPH HALL, CHAIRMAN, SUBCOMMITTEE ON ENERGY
AND AIR QUALITY

The Subcommittee will come to order. I would like to welcome Deputy Secretary Clay Sell to this Committee. Without objection, the Subcommittee will proceed pursuant to Committee Rule 4(e), which allows Members the opportunity to defer opening statements for extra questioning time.

The Chair recognizes himself for an opening statement. First, I want to thank Ranking Member Rick Boucher, and Chairman Barton and Ranking Member Dingell of the Full Committee for their help in setting up this hearing.

Yucca Mountain is a necessary solution for how to dispose of our nation's nuclear waste. We can't allow this program to falter. We owe it to our children and grandchildren to live up to the commitment to build a safe and secure repository. Anything short of that shirks our responsibility to future generations, forces them to cope with our failure, and threatens the viability of nuclear energy to meet their energy needs.

It is also an issue of fairness: making sure that our constituents get what they pay for. Right now, utility ratepayers are paying into the Nuclear Waste Fund to build a repository for spent fuel disposal. However, taxpayers are beginning to shoulder the burden for DOE's delay in accepting spent fuel for disposal. Of the more than 60 lawsuits against DOE for this delay, DOE has settled two and lost one. So far, the cost to the taxpayer is \$141 million over the last two years. These numbers are only going to increase as more of these lawsuits are resolved, potentially costing taxpayers as much as a half a billion dollars each year for waste that should be stored in Yucca Mountain by now. This means that ratepayers are paying for a service they haven't gotten, and taxpayers are footing the bill for the delay.

Today's hearing is an opportunity for us to examine the problems facing Yucca Mountain. The Administration may propose legislation to solve some of these challenges, and I encourage my colleagues to use this hearing to gain a better understanding of the issue before us in preparation for possible legislative action. I remind all Members of the opportunity to ask questions for the record following the hearing. I have asked the committee staff to quickly pull together those questions that come in. Deputy Secretary Sell, I ask you to please respond to those questions as soon as you can. I look forward to working with you, and listening to your testimony today.

MR. HALL. I remind all members of the opportunity to ask questions for the record following the hearing, and without objection they will be allowed and authorized, and I thank the witness. He has agreed that he will honor those as we submit them to him, and I have asked the committee staff to quickly pull together these questions that come in. Deputy Secretary Sell, I am going to ask you to please respond to these questions as soon as you can in a reasonable length of time. I thank you and I look forward to working with you, and I certainly look forward to hearing your testimony today. And the time it took to prepare it, the years that you have made yourself available, the vast experience you have behind us that you are giving to your Nation, I thank you for it and I think everybody ought to really appreciate it. At this time I would recognize Mr. Boucher for an opening statement.

MR. BOUCHER. Well, thank you very much, Mr. Chairman, and let me thank you also for convening today's hearing on the problems of the Yucca Mountain Nuclear Waste Repository Program.

Given the Administration's recent budget request, which includes both funding for Yucca Mountain and for a new proposed program entitled the "Global Nuclear Energy Partnership," I think a status report to this committee from DOE is clearly in order at this time. I strongly support the Yucca Mountain Repository Program, and I am concerned about a number of matters that are affecting the now long delayed opening of this facility. Let me just review a little bit of that history.

In 2002, Yucca Mountain was certified as the site for the Nation's repository for spent nuclear fuel; however, there currently is not a projected date on which the facility's operations will commence. The Nuclear Waste Act set an original date of 1998 for opening of the repository, and by missing that date, the Department of Energy was found to be in breach of its obligation to open at that time. More recently, the Department has indicated that it hoped to file a license application for Yucca Mountain with the Nuclear Regulatory Commission by December of 2004, and then to begin accepting waste at the site in 2010. The target for filing the license application was missed and the Department no longer believes the date 2010 for opening the repository is realistic.

Now, I understand that the delay in filing for the license can be attributed to a number of legitimate concerns, such as a court invalidation of the Environmental Protection Agency standard for radiological protection, a standard which is currently being revised. And in addition, the Department is undertaking a review of the design of the repository. Despite the legitimacies of this delay, I am concerned that the Department is at this point unable to provide an estimate of when the license may be filed and of when the repository will be open. Perhaps

Mr. Sell can advise us with regard to the Department's current thinking on these matters.

In addition, the longstanding issue of funding for the Yucca Mountain Project continues to be of concern. While the balance in the Nuclear Waste Fund is currently \$19 billion, annual appropriations for the Yucca Mountain work are only a small fraction of the amount that rate payers are contributing to the fund on an annual basis. This year, for example, the Administration has proposed a total of \$544 million for the Nuclear Waste Disposal Program, but only \$156 million of that amount derives from the Nuclear Waste Fund. The balance of it actually comes from the Department of Defense. Congressional budget rules place the Nuclear Waste Fund on budget, and expenditures are subject to annual appropriations, which themselves are governed in a general way by the category allocations that come from the Budget Resolution. As a result of that structure, spending requests for Yucca Mountain have to compete with funding requests for other Department of Energy programs, and that obviously provides difficulty when appropriations are being considered by the Appropriations Committee.

Over the past number years, legislative proposals to take the Yucca Mountain fund, that Nuclear Waste Fund, off budget have been debated by this committee, but have come to no resolution, largely because of opposition coming from other committees in the Congress, the Budget Committee and the Appropriations Committee. And so we remain in a circumstance where we have to compete with other DOE programs to get annual expenditures from a fund that is funded by rate payers of the utilities.

I very much look forward to Mr. Sell's testimony today. Hopefully, he will give us projected dates for filing the license application with the Nuclear Regulatory Commission, and also perhaps a projected date under which this repository can at long last be opened. I also look forward to hearing more from him about the Administration's proposed Global Nuclear Energy Partnership, and I want to echo concerns that were voiced by a number of members of this committee during the hearing with Secretary Bodman last week about the effect that the new GNEP Program may have on the Yucca Mountain Program. While I understand that the Administration has touted its new proposal as being complimentary to the Yucca Mountain Repository Program, it remains unclear if the Department has the financial and personnel resources to carry forward both programs simultaneously. And I think that we have to be very careful about authorizing the origination of a new massive program such as GNEP at a time when the Yucca Mountain Program itself has undergone delay after delay and is certainly at the present time not sailing along very smoothly.

So, Mr. Chairman, there is a lot of ground to be covered with regard to Yucca Mountain, and I think this hearing is, in fact, very timely and I want to commend you for organizing it and thank Mr. Sell for being our witness this morning. Thank you, and I yield back.

MR. HALL. I thank the gentleman. The Chair recognizes the gentleman from Idaho, Mr. Otter.

MR. OTTER. Mr. Chairman, I would yield to Mr. Dingell.

MR. HALL. Excuse me. Would you pardon me a minute? I didn't note that Mr. Dingell is here. Mr. Dingell, we recognize you at this time, the Ranking Member.

MR. DINGELL. Mr. Chairman, you are most gracious. I thank you and I commend you for holding this hearing to examine the status of the Department of Energy's program to develop a repository for the disposal of nuclear waste at Yucca Mountain, Nevada. This program has been underway since Congress enacted the Nuclear Waste Policy Act of 1982. It has collected something like \$25 billion from the ratepayers and it is pivotal to our country's ability to depend on nuclear energy now and in the future. As a matter of fact, this program has been around almost as long, Mr. Chairman, as you and I have, and it means that it is probably within, perhaps, 10 years or 15 years of retirement age. I would also like to welcome Deputy Secretary Clay Sell, welcome, whom I hope will be able to enlighten us on the current state of the program.

I would observe that many of the problems at Yucca Mountain, missed deadlines, litigation resulting for program delays, difficulties with the Environmental Protection Agency's radiation standards, and funding issues, predate you and your tenure and that of Secretary Bodman at DOE. While you and the Secretary are to be commended for tackling these problems, I must say that several recent events, on the watch of this Administration, cause me serious concern.

First, I am concerned that DOE currently cannot even provide Congress with an updated estimate of either the date on which it plans to file an application for a license with the Nuclear Regulatory Commission, or the date on which we might expect that the repository will open. I hope your testimony will lead to some answers to those questions. I understand that DOE has undertaken a broad internal review of its Yucca Mountain Program. While this recalibration may improve the program in the long term, I would observe, as my old daddy used to, the perfect often is the enemy of the good, and continued delays can undermine the public and congressional confidence.

Second, as I have stated in the past, I am concerned about the adequacy of the program funding and the possibility that the Nuclear Waste Fund is subject to abuse. I had hoped that the Department would send up location in time for the Congress to consider it during this

abbreviated legislative session, which I am told will consume approximately 60 working days. But I would observe that I have hopes, but I would observe that I lack optimism on this matter.

I would like to go on record once again with my concern that Yucca Mountain receive adequate annual appropriations, and my support for the legislation to prevent pillaging, both of the \$19 billion in past rate payer contributions in the corpus of the Nuclear Waste Fund and future contributions. I would observe that this has been seen by both the Administration, the Office of Management and Budget, our dear friends on the Budget Committee and the Appropriation Committee, as a wonderful place for money to be taken from to be applied to other purposes.

Finally, I reiterate the concerns I voiced to Secretary Bodman last week at the full committee budget hearing about Global Nuclear Energy Partnership, with which, I understand, you are deeply involved. In my tenure in this committee, I have seen a number of ambitious and costly energy programs undertaken with great hopes. A few of these have succeeded, but many have failed. I hope this program proves to be useful. I remain concerned, however, that it may prove to be simply a distraction for the Department that prevents it from fulfilling its responsibilities under the Nuclear Waste Policy Act of 1982 and the recently enacted Energy Policy Act of 2005. I would observe that seeing the legislative language and having hearings on this would be immensely useful in understanding what it is that is going on at the Department.

It is always tempting, I have observed, to undertake shiny new programs, rich in the theoretical promise, but we do have only one Department of Energy. I would be much more comfortable if this new initiative entailed a Yucca Mountain license application having been filed with NRC and legislation to protect the Nuclear Waste Fund had been enacted, and settlements have been reached with utilities to staunch the bleeding from legal damages for program delay. And I would observe that this program is hemorrhaging money because of litigation, because the money has been diverted and because the government has not been able to address these problems.

As it is, there are multiple outstanding questions about when the Yucca Mountain Program will go forward, whether ratepayers will ever see the light at the end of the tunnel in terms of their responsibility to pay into the waste fund, and whether or not the fund can be protected from raids by the Committee on Budget and the Committee on Appropriations. The last week, which probably requires--rather, this last task, which probably requires legislation, is unlikely to succeed without significant and unwavering support from the Administration, including the Office of

Management and Budget, which has yet to send a bill up to aid the Congress in its efforts.

Mr. Chairman, I want to thank you for your patience with me, I want to thank my colleagues for their patience with me, and I want to observe that I look forward to hearing from you, Mr. Secretary, the answers to the questions that I have raised here, and I hope that we will be enabled by this meeting, and others like it elsewhere and here, to make some progress on addressing the problems that we are talking about today. Mr. Chairman, I thank you.

[The prepared statement of Hon. John D. Dingell follows:]

PREPARED STATEMENT OF THE HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF MICHIGAN

Mr. Chairman, thank you for holding this hearing to examine the status of the Department of Energy's (DOE) program to develop a repository for the disposal of nuclear waste at Yucca Mountain, Nevada. This program has been underway since Congress enacted the Nuclear Waste Policy Act of 1982; it has collected something like \$25 billion from ratepayers; and it is pivotal to our country's ability to depend on nuclear energy now and in the future.

I would like to welcome Deputy Secretary Clay Sell, whom I hope will be able to enlighten the Subcommittee on the current state of the program. Certainly many of Yucca Mountain's problems – missed deadlines, litigation resulting from program delays, difficulties with the Environmental Protection Agency's (EPA) radiation standards, and funding issues – predate your and Secretary Bodman's tenure at DOE. While you and the Secretary are to be commended for tackling these problems, I must say that several recent events on your watch cause me grave concern.

First, I am concerned that DOE currently cannot even provide Congress with an updated estimate of either the date on which it plans to file an application for a license with the Nuclear Regulatory Commission (NRC) or the date on which we might expect the repository to open. I understand DOE has undertaken a broad internal review of its Yucca Mountain program. While this recalibration may improve the program in the long term, the perfect often is the enemy of the good and continued delays can undermine public and Congressional confidence.

Second, as I have stated in the past, I am concerned about the adequacy of program funding and the possibility that the Nuclear Waste Fund is subject to abuse. I had hoped that the Department would send up legislation in time for Congress to consider it during this abbreviated legislative session, and I remain hopeful if not optimistic. I would like to go on record, once again, with my concern that Yucca Mountain receive adequate annual appropriations, and my support for legislation to prevent pillaging of both the \$19 billion in past ratepayer contributions in the "corpus" of the Nuclear Waste Fund and future contributions.

Finally, I reiterate the concerns I voiced to Secretary Bodman at last week's full Committee budget hearing about the Global Nuclear Energy Partnership, with which I understand our witness has been deeply involved. In my tenure on this Committee, I have seen a number of very ambitious and costly energy programs undertaken with high hopes. A few of these have succeeded, but many have failed. I hope this program proves useful. I remain concerned, however, that it may prove a distraction for the Department that prevents it from fulfilling its responsibilities under the Nuclear Waste Policy Act of 1982 and the recently enacted Energy Policy Act of 2005.

It is always tempting to undertake shiny new programs, rich with theoretical promise, but we only have one Department of Energy. I would be much more comfortable with this new initiative, if a Yucca Mountain license application had been filed with the NRC, legislation to protect the Waste Fund had been enacted, and settlements had been reached with utilities to staunch the bleeding from legal damages for program delays.

As it is, there are multiple outstanding questions about when the Yucca Mountain project will go forward, whether ratepayers will ever see the light at the end of the tunnel in terms of their responsibility to pay into the Waste Fund, and whether or not the Fund can be protected from raids by the Committee on the Budget and the Committee on Appropriations. This last task, which probably requires legislation, is unlikely to succeed without significant and unwavering support from the Administration, which has yet to send up a bill to aid Congress in its efforts.

With that, I thank my colleagues and look forward to the Deputy Secretary's testimony.

MR. HALL. I thank the long-time, venerable Chairman of this committee. The Chair recognizes Governor Otter of Idaho for an opening statement.

MR. OTTER. Thank you, Mr. Chairman. I am going to yield my opening statement for question and answer time later on. Thank you.

MR. HALL. Fine. The Chair recognizes the good doctor from Texas.

MR. BURGESS. Thank you, Mr. Chairman, and I will do likewise, other than that I want to say welcome to the Deputy Secretary and I appreciate everything you have done with the Administration. Thank you.

MR. HALL. Now, if we have that same response from Mr. Markey, I would be surprised, but we will offer Mr. Markey the opportunity to say a few words. Mr. Markey.

MR. MARKEY. I thank you, Mr. Chairman. The Yucca Mountain nuclear waste dump proposal is in a shambles, and it is a shambles created both by the law under which this program operates and the willful mismanagement of this program by the Department.

In 1987, Congress amended the Nuclear Waste Policy Act to limit the Nation's search for a permanent geological nuclear waste repository to Yucca Mountain, Nevada. That decision was not based on science, it was based on politics, on the fact that the congressional delegations from the other States previously under consideration were able to use their political muscle to pass the nuclear queen of spades on over to the State of Nevada, as chosen by this committee; a politician. It is inevitably a fool's errand when real scientists are asked to validate scientific decisions made by politicians for reasons of political expediency. And that is the cause of the entire mess right from the beginning, that this committee selected Nevada, not scientists.

And so after 20 years of studies, we still don't know whether the site is safe, let alone whether we can safely transport all of the waste from the

reactor sites across our roadways and railways to the mountain. What we do know is that if Yucca Mountain opens, we will have to move almost 80,000 tons of waste to the site. That would require about 53,000 truck shipments and 10,000 rail shipments over about 25 years through cities and counties where nearly 250 million people live; Sacramento, California, Buffalo, Denver, Chicago, and of course Nevada.

Before he was elected the first time, President Bush wrote: "I believe sound science, not politics, must prevail when it comes to the designation of any high-level nuclear waste repository." And he went on to write: "As President, I would not sign legislation that would send nuclear waste to any proposed site unless it has been deemed scientifically safe." Once elected, however, President Bush did not follow his pledge. It is clear that unsound science is prevailing at Yucca Mountain and in the Bush White House. Consider some of the scientific problems that have come to light. The court threw out EPA's first radiation protection standards because they were not strong enough to protect the public from radiation exposure and they failed to follow the recommendations of the National Academy of Sciences.

EPA responded to this court decision by issuing proposed new standards for the Yucca Mountain site which are wholly inadequate, do not meet the law's requirements, and do not protect the public health and safety. In fact, EPA is proposing the least protective public health radiation standard in the whole world. And numerous scientific and quality assurance programs, transportation problems, corrosion of casks, effectiveness of materials, and many other issues caused DOE to suspend work on the surface facilities and the Nuclear Regulatory Commission to issue a stop order on the containers. And DOE has been forced to acknowledge that documents and models about water infiltration at Yucca have been falsified.

So what is the Administration's response to these failings? Apparently the Administration is going to try to rewrite the Nuclear Waste Policy Act to cook the books in order to legitimize the selection of Yucca Mountain, even though it can't pass muster based on the scientific and technical standards in current law. At the same time, the Administration is coming in with a pie-in-the-sky Global Nuclear Energy Partnership that it claims will provide us with a new technological magic bullet that will make all of Yucca Mountain's failings fade away. This GNEP Program is a multi-billion dollar boondoggle that will bust the budget, undermine our Nation's nuclear nonproliferation policies, and not provide us with a realistic solution to the nuclear waste problem.

It is time for Congress and the Administration to recognize the Yucca Mountain Project is not going to work and that we need to go back to the drawing board to come up with better alternatives to deal

with the Nation's nuclear waste problems; that we do not sacrifice sound science for political expediency. This Administration is destroying our nuclear nonproliferation policy. We know it is willing, on this past six-years record, to compromise environmental standards in their vain effort to bury all the nuclear waste in the United States in this site in Nevada, but unfortunately, we will still be here 20 years from now. This is my 30th year in Congress, so I intend on spending my 50th year in a hearing on this very same subject, and I think that the chances of that coming to pass are very high given the record of this Administration. I thank you, Mr. Chairman.

MR. OTTER. [Presiding] The gentleman's time has expired. The chair would recognize the gentlelady from California, Ms. Capps.

MS. CAPPS. Thank you to my colleague from Idaho. And, Mr. Chairman, I welcome the witness, Secretary Sell, here today. Mr. Chairman and Mr. Secretary and others, Yucca Mountain continues to pose a threat to public health and safety. This subcommittee must take seriously its commitment to oversight and address the serious concerns raised by the Yucca Mountain Project. First and foremost, we must ensure that both public health and the environment are protected by establishing appropriate radiation standards. EPA's first attempt at doing so failed to comply with the National Academy of Sciences' recommendations, and the D.C. circuit subsequently struck down the so-called standards. Sadly, EPA's current standard proposal, which is still not finalized, also falls short. One nuclear expert has warned that the standards would not adequately protect the public from cancer risks.

Technical and logistical problems continue to plague the project as well. The Department of Energy halted all work on the site in January, as we know, because of quality assurance problems, and further concerns about potential terrorist acts on the transportation of nuclear waste continue to reduce confidence in the Yucca Mountain Project. Last month, NAS called on the Department to analyze this potential threat. As you know, California and my constituents bear a disproportionate share of the risks since the project is less than 20 miles from our State's border. Even leaving aside potential terrorist attacks, moving any nuclear waste through California across our roads and waterways should give us all pause.

I have a nuclear plant in my district. Contained within the reams of DOE documents on Yucca Mountain are the plans to load barges of nuclear waste from Diablo Canyon Nuclear Power Plant in my district. The barges would steam down through the Santa Barbara Channel, on the way to Ventura County, where the waste would be off-loaded and transported by truck to Nevada. I am deeply concerned about planning for such a scenario because I don't believe it has been very thorough.

Let me cite just one example. The dry-cask storage containers that will carry this waste are tested to withstand submersion in water. I haven't found any tests, submersion tests, for these casks at anything like the depths of the Santa Barbara Channel where the barges would travel. So what happens if there is an accident there and a number of these concrete containers find themselves at the bottom of the channel, a channel which, by the way, is prone to earthquakes, as is Diablo Canyon? Will they be able to withstand the depths? Can we retrieve them? And how safe would the channel and the surrounding area be? This scenario could be played out in different forms in congressional districts across this country, only maybe it is an accident in a town or on the side of a mountain.

I don't believe we should be subjecting communities across the country to the dangers Yucca Mountain presents. I have little faith in the scientific studies behind this project, that they are sound, and not much more faith that it can be carried out safely and effectively. So I propose that we do this the right way, with strong science, thorough planning, and adequate public input. And so I thank you for holding the hearing and the witness for being here today. I yield back.

MR. OTTER. The gentlelady yields back. Mr. Shimkus of Illinois.

MR. SHIMKUS. Thank you, Mr. Chairman. I think I will wait for my questions.

MR. OTTER. The gentleman from New York, Mr. Engel.

MR. ENGEL. Well, thank you, Mr. Chairman for convening this important hearing on the status of the Yucca Mountain Project. Like many members in Congress, my beliefs regarding the use of Yucca Mountain as a nuclear repository site has evolved over the years. Although I have supported the use of Yucca Mountain in the past, I now have serious reservations about the viability of this project and I hereby withdraw my support.

Nearly 20 years have passed since Congress first selected this site for the long-term geological disposal of the Nation's radioactive waste, and the planning for actually utilizing this site has been fraught, as my colleagues have mentioned, with problems and has lacked full transparency. We have been told that the DOE still has no projected date to commence operations at Yucca. The repository is being redesigned again and before work can start, a new license will need to be obtained from the NRC. And from that point, the NRC could take another three years to decide whether to authorize construction at Yucca Mountain. A once firm date of 2010 for Yucca Mountain to accept nuclear waste has long since been abandoned. Before construction even begins, DOE must upgrade roads, improve the electric supply, communications and the transportation around Yucca Mountain; so even more delays.

This begs the question, what exactly is taking so long and where is all the money going? Six and one half billion dollars have already been spent from the Nuclear Waste Fund on the Yucca Mountain Program, with very little to show from it. Further, while DOE has conservatively estimated it will take about \$58 billion more to complete the project, that figure is met by widespread doubt in every sector. Additionally, the longer DOE fails to accept spent fuel, the higher the costs will be relating to settling lawsuits from utilizes who counted on DOE fulfilling their commitment to accept the spent fuel. Since missing the original January 31st, 1998 deadline, DOE has been served with over 60 lawsuits and has already paid out \$141 million to settle some of them. In this time of scarce resources, the government cannot afford to lose any money such as this.

I look forward to hearing from the Deputy Secretary about how he envisions the proposed Global Nuclear Energy Partnership and how that will be integrated with the Yucca Mountain Project, as well as the latest legislation the Administration is working on to facilitate the licensing, construction, and operation of Yucca Mountain. In short, it is a mess. I can no longer support this kind of mess. Our effort to safely dispose of nuclear waste must have a clear plan with responsible stewardship of the taxpayers money, and I again welcome the secretary to our subcommittee, and I thank you, Mr. Chairman.

MR. OTTER. The gentleman yields back. There is no other members of the committee here, so members of the committee, I would like to introduce you to Mr. Clay Sell. Since February 2004, Mr. Sell has served as the Special Assistant to the President for Legislative Affairs, specializing in coordinating and promoting the President's legislative agenda in the United States Senate, with a primary focus on policy area of the energy and natural resources budget and appropriations. Previously, Mr. Sell had served on the Bush-Cheney transition as part of the energy policy team. And from 1995 to 1999, he served on the staff of Congressman Mack Thornberry, our colleague from Texas, functioning the last two years as the congressman's Administrative Assistant. Mr. Sell, welcome to the committee. Mr. Sell was sworn in as the Deputy Secretary on March 21st, 2005. We welcome you to the committee and await your remarks. Mr. Sell.

**STATEMENT OF THE HON. CLAY SELL, DEPUTY
SECRETARY, UNITED STATES DEPARTMENT OF
ENERGY**

MR. SELL. Mr. Chairman and members of the subcommittee, it is a pleasure to be here today to provide an update on the Department--

MR. BOUCHER. Mr. Sell, could you move your microphone just a bit closer? That would help.

MR. SELL. Closer or further?

MR. BOUCHER. Yes, a little closer to you would help.

MR. SELL. Is that better?

MR. BOUCHER. That is much better. Thank you.

MR. SELL. It is a pleasure to be here today to provide an update on the Department of Energy's Yucca Mountain Project. If I may, I would like to submit my written statement for the record and provide a few summary remarks.

MR. OTTER. Without objection and hearing none, so ordered.

MR. SELL. The President has stated a policy goal of promoting a great expansion of nuclear power here in the United States and around the world. The reasons for this are obvious. The Department of Energy projects that total world energy demand will double by 2050. In focusing specifically on electricity, projections indicate an increase of over 75 percent in global energy consumption in the next two decades. Nuclear power is the only mature technology of significant--to provide large amounts of completely emissions-free base-load power to meet this need; thus, a significant expansion of nuclear power will allow us to meet both our energy and environmental goals.

I believe the United States is on the verge of a nuclear renaissance, in many respects, due to the provisions enacted in the Energy Policy Act of 2005. And on that note, I would like to thank and acknowledge the work of the members of this committee for your efforts in crafting and passing this important piece of legislation. As a result of that, I believe new plants will be built; however, we need many new plants and the only way to ensure a significant amount of new plant construction in this country is to finally resolve the issue of spent fuel. To do so, we must license and operate the Yucca Mountain site as soon as possible.

In my remaining remarks, I would like to focus on four main points. First, the importance of Yucca Mountain as a matter of national policy; second, an explanation of how we have redirected the program; third, the recent proposed Environmental Protection Agency radiation protection standards; and fourth, the Administration's forthcoming Yucca Mountain legislation.

First, on the importance of the Yucca Mountain. Today's spent nuclear fuel and high-level waste is being temporarily stored at 122 sites in 39 States across our Nation. As the members of this subcommittee know, the U.S. Government is obligated by law to consolidate and dispose of the 50,000 metric tons of spent fuel already generated, as well as the 2,000 additional tons being generated annually. As of late, there has been some speculation over whether or not we still need Yucca

Mountain, in light of the waste minimization benefits of the Administration's recycling proposal that was included in the recently announced Global Nuclear Energy Partnership. The simple fact is this: Yucca Mountain is needed under any cycle scenario. As successful as the new recycling technologies may be under GNEP, there will always be a waste byproduct that needs disposal. This Administration is committed to the success of the Yucca Mountain Project and we will not waver from that position.

As part of that commitment, last year we announced a redirection of the project to focus on safety, simplicity, and reliability. This included adopting a predominantly clean canistered approach to spent fuel handling operations. Under this approach, a single canister would be used to transport, age, and dispose of the waste without ever needing to reopen the spent fuel package. We also announced that in order to better organize and focus our scientific work, Sandia National Laboratory was chosen to act as the lead laboratory on the project. Also, last year the EPA proposed a revised radiation protection standard. The revised standard retains the existing 10,000 year individual protection standard at 15 millirems per year; it retains that and it supplements it with an additional one million year standard applicable at the time of peak dose. The proposed standard, even one million years from today, keeps the exposure limit at what residents of Denver, Colorado already receive as a result of high levels of naturally occurring background radiation. These changes and programmatic redirections have resulted in schedule changes. Later this summer the Department expects to have a new design for the surface facilities at Yucca, as well as a schedule for submission of the license application to the NRC that supports this approach.

To compliment our new project direction, the President's 2007 Budget stated that the Administration would send to Congress proposed legislation to facilitate the licensing, construction and operation of the repository at Yucca Mountain. The proposal is currently undergoing final review, but we expect to address the permanent withdrawal of land around Yucca Mountain, as well as needed funding reform, in the legislation. This potential legislation, coupled with the waste minimization benefits of recycling spent fuel, could postpone, indefinitely, the need for the United States to begin a second repository siting and development effort. As this committee is well aware, there are more than two dozen States where we would look to site a second repository.

In conclusion, there is an undeniable need for Yucca Mountain. To meet this need, the Department is taking steps today to ensure that we develop and construct the safest, simplest repository that we possibly

can, based on sound science and quality work. But we must also have the help and support of the Congress and of this committee to remove funding uncertainties and other constraints that have hindered consistent progress. On this, we look forward to working closely with this committee on the forthcoming legislation. Thank you, Mr. Chairman. This concludes my opening statement. I look forward to taking your questions.

[The prepared statement of Hon. Clay Sell follows:]

PREPARED STATEMENT OF THE HON. CLAY SELL, DEPUTY SECRETARY, U.S. DEPARTMENT OF ENERGY

Mr. Chairman and members of the Subcommittee, it is a pleasure to be here today to provide an update on the Department of Energy's Yucca Mountain Project.

For more than 50 years, our Nation has benefited greatly from nuclear energy and the power of the atom, but we have been left with a legacy marked by the generation and accumulation of more than 50,000 metric tons of commercial and defense generated spent nuclear fuel and high level waste. Today, I will address the following topics in my opening statement:

- First, the importance of Yucca Mountain for the Nation
- Second, an explanation of the clean-canistered approach
- Third, the selection of Sandia National Laboratories as the Project's lead laboratory
- Fourth, a discussion of the proposed Environmental Protection Agency (EPA) Radiation Protection Standards
- Fifth, the development of a baseline and schedule for the Project
- Sixth, an update on potential Yucca Mountain legislation

The Importance of Yucca Mountain to the Nation

There has been a lot of speculation whether or not we still need Yucca Mountain in light of the announcement of the Global Nuclear Energy Partnership (GNEP) or the possibility of longer term on-site storage of waste at reactor sites.

The clear answer is, yes, we still need Yucca Mountain. In fact, we need Yucca Mountain today more than ever. This Administration and the Department of Energy are committed to aggressively moving forward with Yucca Mountain.

Yucca Mountain is consistent with the global consensus that the best and safest long-term option for dealing with high-level waste is geologic isolation. The National Academy of Sciences has spoken on this topic and has endorsed geologic disposal since 1957.

Yucca Mountain is the key to reducing our dependence on foreign and fossil sources of energy, as nuclear power is the only technology that is mature and capable enough today to handle a significant increase in base load and is also reliable, clean, safe, and emissions-free. Nuclear power offers this country a tremendous resource and a means towards energy security—*if* we are able to deal with the waste issue.

Today spent nuclear fuel and high level waste is being temporarily stored at 122 sites in 39 States across our Nation. In 2002, Congress approved President George W. Bush's recommendation for development of Yucca Mountain. That recommendation was based on more than 20 years of scientific research indicating that Yucca Mountain provides a safer and more secure location for the Nation's nuclear waste than the current temporary surface storage facilities, many of which are located near lakes, rivers, and waterways.

Yucca Mountain is needed even if the technologies of GNEP exceed its initial expectations, and Yucca will be needed under any fuel cycle scenario. As successful as we may be with GNEP, there will always be a waste bi-product that needs disposal as part of the recycling activities.

Moreover, we need Yucca Mountain as soon as possible so we can start fulfilling our obligation to consolidate and dispose of the 50,000 metric tons of spent fuel already generated, as well as the 2,000 additional tons being generated annually. Simply put, we must move forward with Yucca Mountain.

The Clean-Canistered Approach

In mid-2005 Secretary Bodman directed a thorough review of the Department's overall approach to design, licensing, and operation of the Project to determine if there were better ways to run the repository.

Late last year the Department announced a redirection to a predominantly clean-canistered approach on spent fuel operations. Under this new approach, a single canister would be used to transport, age, and dispose of the waste without ever needing to re-open the spent fuel package. We believe that this approach will be a simpler, safer, and more reliable operation.

The clean-canistered approach will significantly reduce the risks of radiation exposure and contamination from spent fuel handling operations at the repository. With this plan, the spent nuclear fuel primarily will be packaged for disposal by the utilities that generated the waste. This approach offers the advantage of having those who know most about the waste - the generators - be responsible for placement in canisters and packaging. We would thus take advantage of commercial reactor sites with existing capability and skills. The Department will not need to build new equipment and train operators for a capability that already exists in the private sector. We are working with industry to develop the specifications for a canister that can contain commercial spent nuclear fuel after it is discharged from the reactors and cooled. In addition to requiring fewer, cleaner, and simpler surface facilities, the new facility approach should be easier to design, license, build, and operate.

While this approach will have significant short-term and long-term benefits, it will require additional time to redevelop and revise portions of the license application. Later this summer the Department expects to have a new conceptual design for the surface facilities at Yucca Mountain that support this approach.

Sandia Lead Laboratory

The Department also announced that Sandia National Laboratory will act as the lead laboratory to coordinate and organize all scientific work on the Project. Since this Project represents one of the major scientific and technical challenges of our time, we want to ensure that we take full advantage of the great resources in our national laboratories. Additionally, to ensure that we keep a critical eye on our work, we are continuing efforts to instill a "trust but verify" culture. Part of this effort will lead to the formation of a University-based consortium to independently review key aspects of the Project to ensure objectivity and impartiality.

Proposed EPA Radiation Protection Standards

On August 22, 2005, the Environmental Protection Agency (EPA) proposed a revised "Public Health and Environmental Radiation Protection Standards for Yucca Mountain" in response to a decision by the U.S. Court of Appeals for the District of Columbia Circuit which vacated portions of the existing EPA standards. Specifically, EPA proposed a radiological exposure limit for the time of peak dose to the general public during one million years following the disposal of radiological material at the Yucca Mountain site.

The proposed rule retains the existing 10,000-year individual protection standard of 15 mRem/year to the reasonably maximally exposed individual, and supplements it with an additional standard applicable at the time of peak dose. This proposed rule includes two compliance periods and recognizes the limitations of bounding analyses, the greater uncertainties at the time of peak risk, and the increased uncertainty in calculated results as time and uncertainties increase. Retaining the existing 15 mRem/year standard for the initial 10,000-year period ensures that the repository design will include all prudent steps, including the use of engineered and natural barriers, to minimize offsite doses during the first 10,000 years after disposal. These natural barriers, and to some extent the engineered barriers, will continue to operate throughout the million-year period, keeping exposure levels low. In fact, this level of exposure reflects a risk that society already lives with today - the maximum peak dose at Yucca Mountain would be no greater than the level currently received by residents of Denver, Colorado due to the city's higher levels of naturally occurring background radiation.

Development of a Baseline and Schedule

Although the Yucca Mountain Program had intended to submit a license application to the Nuclear Regulatory Commission (NRC) in December 2004, a number of issues arose that prevented this, including development of the amended draft EPA radiation protection standards as discussed earlier, redesign of the surface facilities to handle primarily canistered waste, and other matters that need to be addressed before we are ready to submit a license application. We believe that submission of our license application should not be driven by artificial dates. We are committed to developing a realistic schedule that will result in the submission of a strong license application to the NRC. We expect to receive and review our new design this spring and, after its approval by the Secretary, incorporate it into our baseline. Later this summer, we anticipate we will publish our schedule for submittal of the license application to the NRC.

Proposed Yucca Mountain Legislation

To complement the current approach and assure confidence in moving forward with Yucca Mountain, the President's 2007 Budget stated that the Administration will send to Congress proposed legislation that would facilitate the licensing, construction and operation of a repository at Yucca Mountain.

The proposal is still in the interagency review process. We can expect it to address the permanent withdrawal of land around Yucca Mountain as well as needed funding reform. This potential legislation, coupled with the potential of GNEP for waste minimization, could postpone indefinitely the need for the U.S. to begin a second repository siting and development effort. As the committee may recall, there are more than two-dozen States where we would look to site a second repository.

Enactment of this important proposal will help demonstrate that the Nation can dispose of nuclear materials in a safe, reliable, and efficient manner, and will help advance the Nation's energy security, and national security objectives.

Conclusion

In conclusion, there is a clear National need for Yucca Mountain, even if we could reduce our National electricity consumption by 20% and were able to shut down every commercial reactor and nuclear project in the country today. We are taking steps to ensure that we develop and construct the safest, simplest repository that we possibly can, based on sound science and quality work. I believe that our license application will provide the necessary assurances that we can operate Yucca Mountain in compliance with the performance requirements of the Environmental Protection Agency and the Nuclear Regulatory Commission. We will also demonstrate that our approach to operations will be carefully planned, logical, and methodical.

MR. OTTER. Thank you, Mr. Sell, for that opening statement, and the chair would recognize himself for the first five minutes to begin the question and answer period. Mr. Sell, I am sure other members of the committee who are not here would want to submit questions to you and I would ask you now that if they do submit those questions to you, that you would respond, for the record, to those questions in writing. They are going to write little notes to you, little love notes, probably, but probably not.

MR. SELL. I will respond whether they are love notes or otherwise.

MR. OTTER. Thank you. Because Yucca Mountain has been designated as the location of the Nation's permanent repository and because of the preparations that have already been made, is there any chance that the Department would support legislation authorizing the Department to establish an interim storage facility very close to Yucca Mountain?

MR. SELL. Mr. Chairman, the Administration and this Department has an open mind as it relates to interim storage. Under the Nuclear Waste Policy Act which governs our activities today, it is our view that we do not have authority, as it stands now, to proceed with interim storage, but we certainly have an open mind as to that possibility, if it be the will of Congress.

MR. OTTER. So in other words, if I understand you right, in order to keep the contracts that the Department of Energy and the Department of Defense have made with at least the State of Idaho, and some scheduling programs that they have already made with other sites, that if the legislation were advanced to Congress to establish an interim storage site close to Yucca Mountain, in proximity to Yucca Mountain, that the Administration would not oppose that.

MR. SELL. We would certainly look forward to working with the Congress, and I think it is certainly possible that we would support that.

MR. OTTER. Is sometime later this summer the closest we can get to a potential revealing of a date and new standards for Yucca Mountain?

MR. SELL. In short, Mr. Chairman, yes, because we want to be quite sure that when Secretary Bodman and I put forward a revised schedule, it is one that we are confident we will be successful with and it is one that we are confident will ultimately result in the granting of a license by the Nuclear Regulatory Commission. We are revising the program with the goal of absolute success in mind, and we would ask the indulgence of the committee to allow us to take this next few months to finalize the schedule that we would then like to come brief the committee on.

MR. OTTER. In order so that we don't have a replay of what happened with the first standards, is the Department of Energy now

working with the EPA to establish the new standards so it is not challengeable in the courts?

MR. SELL. Well, the requirement to set the standard is one that goes to the EPA and not to the Department of Energy. We will be the licensee that will be required to meet that standard. The standard that is now out for comment is one that we think is--it is one that we believe we can license the facility to and we would look forward to proceeding with the license application under that standard.

MR. OTTER. Thank you. The Yucca Mountain Program recently assumed ownership of a large cell at the Idaho National Lab. Do you know how the Department of Energy intends to employ and use that?

MR. SELL. I am sorry, Mr. Chairman, I don't think I understand the question.

MR. OTTER. The cell that the Department of Energy recently assumed ownership over at the Idaho National Laboratory, I was wondering if you could advise myself and the committee on what intent, what future intent does the Department of Energy have for the use of that building?

MR. SELL. This is a new building that could potentially be used for the consolidation of material.

MR. OTTER. It could?

MR. SELL. Did I understand that correctly?

MR. OTTER. It could? Is that your intent?

MR. SELL. This is a facility, if I understand the facility correctly that you are talking about, this is one that has previously been used for the storage of material. If my memory serves me correctly, there was a previous decision made to consolidate material elsewhere and remove material out of that facility. I believe last year the Congress directed through the Appropriations Bill that we reconsider the use of that facility for the consolidation of material, and that a review is going as we speak, a review which has not resulted in any conclusions.

MR. OTTER. Thank you, Mr. Sell, and my time is up. The chair would recognize the Ranking Member.

MR. BOUCHER. Well, thank you very much, Mr. Chairman, and, Mr. Sell, thank you for appearing today and for your testimony. I have just several brief questions for you. You have indicated in your testimony that the Department of Energy will apply to the Nuclear Regulatory Commission for the Yucca license, you believe, sometime this summer. Can you project a date for us? Can you project a month when you think that application will be filed?

MR. SELL. If I may clarify?

MR. BOUCHER. Yes, please do.

MR. SELL. Congressman Boucher, this summer we expect to provide the Congress and this committee a revised schedule as to when we would make the application to the Nuclear Regulatory Commission. So this summer we will have a better idea on what the schedule is, but the license application will not be made this summer.

MR. BOUCHER. Do you think it will be made this year?

MR. SELL. Once again, we are seriously reviewing what we think is possible and what we think we can be successful with and what our requirements are to meet that. That review is not complete and I would not want to prejudge the determination that we will make as to the appropriate time to make the license application.

MR. BOUCHER. When this summer will you be in a position to give us this further briefing?

MR. SELL. I believe we are projecting that to be in the June, July time frame.

MR. BOUCHER. June, July time frame. So, Mr. Chairman, perhaps we could have a subsequent hearing in that time frame, in order to receive some indication from the Department of Energy about when the license will be applied for, and perhaps at that point be able to project a date when you actually could have this repository open.

MR. SELL. I would look forward to the opportunity to testify at a future hearing on that.

MR. BOUCHER. Okay. You have also indicated that the Administration may be formulating legislation that could be submitted to the Congress that would help move the Yucca Program forward. Can you give us any indication of when that legislation might be submitted?

MR. SELL. I believe when Secretary Bodman testified last week, he indicated that that legislation would be forthcoming within a month, and that is still our belief.

MR. BOUCHER. When that legislation is received here, will it address funding reform? If it is going to address funding reform, are you going to propose to take the Nuclear Waste Fund off budget? And assuming that you are, which is what we have been trying to do for a number of years here, will your proposal to take it off budget differ in material respects from the legislation we have considered here in the past?

MR. SELL. We are looking at a number of options that would provide greater funding certainty, which has been a chronic problem for this program. At a minimum, what we intend to propose would be consistent with the legislative proposals we have made in the last two years, which would effectively make the annual receipt to the Nuclear Waste Fund directly available to the program. I appreciate that there are strong views from this committee that the entirety of the waste fund

should be taken off budget, and we are looking at that, but I can't say with any confidence that that is a proposal we will be able to make and that we will be able to include. But certainly we want to provide as much funding certainty as possible, and we would look forward to working with the committee on the appropriate way to do that.

MR. BOUCHER. Well, let me say I am one of those who has strong views on that matter and I would encourage you, as you are formulating this proposal, not only to take the fund off budget prospectively so that annual contributions made by rate payers would immediately be made available to the Yucca Program in that year, but that you also protect the approximately \$19 billion which is deposited in the Nuclear Waste Fund today, which, in the absence of some statutory guarantee that it will be made available, it may never be appropriated for that purpose. So I hope you will take care of the \$19 billion that the rate payers have already put into this program, as well as what they will contribute to it in the future, and I don't expect you to comment on that, but that is advice.

MR. SELL. Well, if I may comment?

MR. BOUCHER. And please do, yes, if you care to.

MR. SELL. I certainly share with you the firm commitment that the contributions that the rate payers have made, the roughly \$18 billion, be used exclusively for the Yucca Mountain Project, and that the money be set aside in a way that we can have confidence that that will occur, and that as much funding certainty be provided as possible so that we can eliminate that variable which has affected our ability to make consistent progress on the project.

MR. BOUCHER. Well, thank you. That is encouraging to hear and I hope your legislative proposal reflects that intention. You were recently quoted as saying that the one mil per kilowatt hour fee that rate payers are paying currently into the Nuclear Waste Fund may not be sufficient, which suggests that the Department of Energy may be considering an increase in that one mil per kilowatt hour fee. Are you considering such an increase? Do you think one will be forthcoming? If so, when and how much will it be?

MR. SELL. Each year, under the Nuclear Waste Policy Act, the Secretary of Energy must make a determination as to whether the mil fee is appropriate. The Secretary reviewed material this year and he made the determination that the fee as it is presently being collected is in fact appropriate and sufficient, but we will continue to make that determination, as we are required to do, annually in the coming years.

MR. BOUCHER. And so you are not currently anticipating an increase?

MR. SELL. To directly answer your question, we are not anticipating or proposing an increase.

MR. BOUCHER. Okay. Mr. Chairman, may I have your indulgence for one additional question? Perhaps--

MR. HALL. The chair will give you another minute.

MR. BOUCHER. Thank you, Mr. Chairman. I just want to get your sense of how you could go forward simultaneously with a vigorous Yucca Mountain Program and also be launching what is also a very large additional waste program, and that is the so-called GNEP. Do you think you have the resources, both from a financial and a personnel standpoint, to do both together?

MR. SELL. We are confident in that as we proceed on these two initiatives, that we will either have or we will go get the management personnel and technical resources to effectively manage these two programs, and we are also seeking from the Congress the financial resources to pursue these two programs. I think, to put it in the right context, we believe that the world and this country needs a dramatic expansion of nuclear power, and that means something from a waste management standpoint. And if we only keep nuclear electricity generation at 20 percent for the balance of the century, we will have to build the equivalent of nine Yucca Mountains, if we stay with the current disposal strategy. So it is our view that we should begin now to work in partnership with other advanced fuel cycle States to develop the technologies that would allow us to optimize, over the decades to come, the use of Yucca Mountain. We have to have it now, because we want to hopefully just build one.

MR. BOUCHER. Well, I understand the purpose, Mr. Sell, and I will say to you that I am a little bit skeptical that you are going to be in a position to go forward simultaneously with a vigorous Yucca Program and this one at the same time. That is a debate we will have another day, I am sure, but I wanted to get your sense about whether you thought you actually could do both together, given the resource limitations that I know you face. Mr. Chairman, thank you for your indulgence and thank you, Mr. Sell.

MR. SELL. Thank you.

MR. HALL. The chair recognizes the gentleman from Illinois, Mr. Shimkus.

MR. SHIMKUS. Thank you, Mr. Chairman, and I want to thank my colleague, Dr. Burgess, for allowing me to jump ahead of him, also. I think I am going to owe him in the future, but it is great to be here. I think the Yucca Mountain debate as far as--is that a suitable location is sound public policy, which we voted on the floor. My question is how expeditiously can we move, and a lot of our frustration here is that, you know, we want to move. We want to open this thing and we need to get this nuclear waste out from the numerous locations we have it around the

country. And the other is, if we don't expand nuclear power in this country, we are going to expand coal generating facilities. Now that is okay by me. I am from coal regions in Illinois, but I think my environmental friends would have a beef with that. So this is a valid issue and you are going to have members who are very strongly in support of Yucca Mountain, very supportive, but we have got to move. We have to go to see some progress, and that is our frustration.

A couple questions. Secretary Bodman stated just last week here before us that the Administration would propose legislation to address Yucca Mountain within a month. If Congress does not act on your legislative proposal this year, what specific activities would be impacted?

MR. SELL. Well, certainly, from a funding certainty standpoint, over the last several years the Administration has consistently received a funding level below what we have requested. And so each year that passes where that is the case, the program is affected. Other than that issue, I don't know that there would be a direct affect in this year if the Congress failed to enact legislation, but we certainly want to be in a position to make progress on this program as quickly as possible. We know that legislation is required to do that and we would look forward to working with the Congress to get that passed as quickly as possible.

MR. SHIMKUS. So you would say that the schedule for the commencement of the repository operations could be affected if we don't move on legislation?

MR. SELL. Absolutely.

MR. SHIMKUS. The Nuclear Waste Policy Act requires the submission of a project decision schedule to be updated as appropriate. In light of the many changes to the program in the last few years, when does DOE plan to submit a revised project decision schedule?

MR. SELL. We intend to brief the committee on a revised schedule in June or July of this year.

MR. SHIMKUS. Last week, Secretary Bodman also said that DOE has begun its evaluation of the need for a second repository, an evaluation that DOE is required to present to Congress beginning in 2007. If the Department has to begin looking at a second repository, which sites would you consider?

MR. SELL. I can't answer that in any way other than to expect that the Department would start with the numerous sites in the 22 States that we had previously reviewed, many of those on the east coast and throughout the mountain west.

MR. SHIMKUS. And if and when you all decide to move in that direction, I am assuming you will provide the committee with a list of the possible sites?

MR. SELL. I am sure we will do that.

MR. SHIMKUS. It might provide some more support for Yucca Mountain once we start evaluating other locations around the country. Just a wild guess on my part. To what extent would a required report on the need for a second repository be shaped by the progress on GNEP?

MR. SELL. Well, it would be shaped by whether the Nuclear Waste--you know, it has been 19 years since the Nuclear Waste Policy Act was amended in any way, and we are going to seek amendments in this legislative proposal which could affect the decision to seek the second repository. And if that is the case, then that may affect the schedule. Otherwise we will proceed with that analysis for a report in the 2007 to 2010 time frame.

MR. SHIMKUS. I mean, this is a really important debate because if we don't revise the legislative schedule, the stored spent fuel, if we do allow reprocessing of that cask, how much would we through the reprocessing diminish? So you know, you take a cask, you have got the current level, and now we reprocess. How much is left? What percentage?

MR. SELL. Well, the key thing--do you mean how much would recycling--

MR. SHIMKUS. Right. It is a historic debate because, obviously, we reprocess and we are going to have--the debate will be more storage available.

MR. SELL. The thing that drives the capacity of a geologic repository is the heat load and the radiotoxicity. And through recycling, and that is a combination of separating material and then burning it down in fast spectrum reactors, we can reduce the heat load and radiotoxicity by two orders of magnitude. So it is our judgment that if we can successfully demonstrate and then deploy recycling technologies, we would have sufficient capacity within the physical constraints of Yucca Mountain for the disposal of all nuclear waste for the balance of this century.

MR. SHIMKUS. How much more are we likely to know in the prospects for success in this technology development by the time the report is issued?

MR. SELL. It is the hope of this Administration, the expectation, to do a significant amount of work to understand better the technologies so that we can make a judgment before the end of this term as to whether we should proceed forward to continue to demonstrate these technologies. The technologies we know we can do. The UREX-plus separations process we have demonstrated in the laboratory. Fast reactors, we have built many, or several, in this country, and many have been built around the world. The key challenge is qualifying fuel for burn-down in a fast reactor. That is the key R and D challenge and we

need to determine whether we can do that on an economic cost scale that would prove to be commercially attractive. That is a significant challenge, but it is one we are going to proceed expeditiously with, with the help and support of this Congress, so that we can make a determination, a better determination as to how to proceed by the end of 2008.

MR. SHIMKUS. Thank you. And my last question is, can you briefly talk about the reclassification of fees and the offsetting collections for the repository program and how this could help accelerate the opening of the repository?

MR. SELL. The reclassification of fees would allow us to take the roughly \$750 million which today goes into the Nuclear Waste Fund and has to be appropriated out, it would allow that \$750 million to go directly to the project. And so that amount, coupled with the contribution from the Defense Nuclear Waste Fund, would provide much greater funding certainty to the program in the critical next few years.

MR. SHIMKUS. Thank you, Mr. Chairman. I yield back.

MR. HALL. Thank you. The chair recognizes the gentleman from Michigan, Mr. Dingell.

MR. DINGELL. Mr. Chairman, I thank you for your courtesy. Mr. Sell, last week Secretary Bodman testified that the Administration plans to send up a bill to the Congress proposing changes in the Nuclear Waste Policy Act of 1982. When will that be done?

MR. SELL. As Secretary Bodman said last week, we hope to have the legislation up within a month.

MR. DINGELL. Hope? Hope?

MR. SELL. Well, Mr. Dingell, I will go beyond hope, I will even say I expect to have it up within--

MR. DINGELL. By what date?

MR. SELL. If it was completely within my control, Mr. Dingell, I would be confident giving you an exact date, but because we are working through the interagency process, I can only tell you what my expectation is.

MR. DINGELL. Approximately, what are your expectations, please?

MR. SELL. My expectation is, we can have the legislation up within a month.

MR. DINGELL. Okay. Now, does the Administration want the Congress to pass legislation on Yucca Mountain this year?

MR. SELL. Yes, we do.

MR. DINGELL. All right. Is that legislation before the Congress in proper legislative and finished form?

MR. SELL. It is not before the Congress today.

MR. DINGELL. When will that happen?

MR. SELL. Well, we will submit it to the Congress and then we would hope to work with the Congress in finding an appropriate co-sponsor.

MR. DINGELL. Is there a date that you can give me on this?

MR. SELL. Mr. Dingell, unfortunately, I cannot give you a better date than what I have previously said.

MR. DINGELL. Now, I find myself confronting a curious conundrum here. Does the Administration expect the Congress to consider legislation before DOE provides the information coming out of the internal program review, or are we going to wait until we complete the program review? It appears to be sensible to have all the facts before we proceed to legislate. What is the answer to that question?

MR. SELL. I believe that we think and we would propose to work those issues in parallel with the Congress; that we would submit legislation for your consideration at the same time--

MR. DINGELL. Does it occur to you that we ought to have the program review completed before the legislation is considered by the Congress so we can know what we are doing?

MR. SELL. I think it is helpful, but I do not think it is necessary that the complete information--

MR. DINGELL. Well, that leaves us in a position where we may legislate one way and your internal review will either tell us we should have done it differently or will require careful cooking of the review. I find neither of these appetizing prospects.

MR. SELL. It is our desire to put our proposal and as much information that would allow the Congress to comprehensively consider that proposal. We would like to put as much information as possible before the Congress and work with the Congress to amend the Nuclear Waste Policy Act.

MR. DINGELL. It is a good lawyer's answer. Now, will the legislation be sent up here before the estimates have been filed with NRC by DOE, or will that indicate when you expect to be able to open Yucca Mountain?

MR. SELL. We expect to have the legislation up within a month. We do not expect to have revised program plan finalized and before the Congress until June and July, and we hope those are the next two dates coming and we hope to work with you to get the legislation passed as quickly thereafter as possible.

MR. DINGELL. I find myself afflicted with a concern that we will thereupon be compelled to function with an information void against a target which is perhaps moving and possibly even moving the wrong direction. What do you say about that?

MR. SELL. Mr. Dingell, the frustration that I know this committee feels is one that I enjoin and it is one that the Secretary feels strongly. We feel frustrated. We are frustrated by the performance of this Department.

MR. DINGELL. I want you to understand, first of all, I have limited time, but second of all, I want you to understand that I share your frustration and these remarks are not necessarily critical, but they are necessary to understand what is going on. Now having said that, Mr. Paul Golan testifying before the Congress today on Yucca Mountain refers to a clean canistered approach to spent fuel operations. He says that work on the pending license application for Yucca Mountain will include the following approach: a single canister would be used to transport, age, and dispose of waste without ever needing to reopen the spent fuel package again.

Now, I find that this, together with the Administration's package with regard to the Global Nuclear Energy Partnership, GNEP, this is going to be, according to what the Administration says, this is going to have the potential to reduce the amount of high-level waste that is stored in a nuclear bomb. Your testimony at page seven alludes to this concept. Now, Mr. Sell, there seems to be some incongruence between these two statements. On the one hand, we have you and Mr. Golan pushing for a design that minimizes contact with high-level waste and saying that the spent fuel canister need never been reopened. On the other hand, with the GNEP, we have the DOE and you suggesting that reprocessing under GNEP will indicate a loss of waste going into Yucca Mountain. How do we rhyme those two statements?

MR. SELL. A significant amount of the spent fuel that this country has generated over the last 50 years will not be a candidate for recycling under any scenario.

MR. DINGELL. So you are going to just recycle new waste, is that it?

MR. SELL. Well, once waste has been about 15 years old, it presents a more challenging prospect to recycle than newer waste.

MR. DINGELL. Understand, this is not criticism. I am just asking information. Now, quickly, can you tell us where you and when you, under GNEP, at the DOE will have the waste reprocessed? Will it be done at the utility sites, at Yucca Mountain, or at some other place?

MR. SELL. Well, if we can prove out the technologies, and we need to, that is a significant engineering challenge. If we can demonstrate those technologies, and then if it makes sense for us to commercialize those technologies, an appropriate process would occur to determine the appropriate site for those recycling facilities.

MR. DINGELL. So this is not at this time known?

MR. SELL. It is not known.

MR. DINGELL. All right. Mr. Chairman, you have been most gracious. Thank you and thank you, Mr. Sell.

MR. HALL. The Chair recognizes Dr. Burgess, the gentleman from Texas.

MR. BURGESS. Thank you, Mr. Chairman. And, Mr. Deputy Secretary, thank you and I appreciate your indulgence. I know it has been a long afternoon. But continuing on the line that the gentleman from Michigan was just pursuing, with the transportation, aging and disposal canisters, that is a new approach?

MR. SELL. It is an old idea but a new approach.

MR. BURGESS. And has this redirection using those transportation, aging, and disposal canisters, has that had an effect on the timing of the cost of the license, the review of ground construction, and operations?

MR. SELL. That has an impact on it as well as the activity related to the radiation standard, the funding issues, and quite frankly, the other issues that have come up as it relates to the quality assurance of the work in the program over the last year. All of those matters, coupled with the review of the program that the Secretary directed, have affected and will affect our schedule for the license application.

MR. BURGESS. And how will it affect it? Will it delay it?

MR. SELL. You know, previously, just a few years ago, the Department had indicated that a license application would be made in December of 2004. That did not occur. And we are working to make a license application to the NRC that will be successful as quickly as possible. If one only wanted to make a license application, we could do that very quickly, but we want to make sure that when we make it, we have a high degree of confidence that we will in fact be successful.

MR. BURGESS. Yes. I would point out, we are going the long way to December of 2004 at this point. Last year, in preparation for the certification, the licensing support network, several e-mails from the United States Geological Survey employees indicated that proper quality assurance procedures had not been followed for their research on water filtration into the repository. Currently, is there action being taken to verify or recreate this data and the models that they worked on?

MR. SELL. There is. We intend to recreate the work. That is one of the things that we have asked Sandia National Lab to do. I would note that in our substantial review of the work, we did not find any of the substantive conclusions incorrect. In fact, they are consistent with many other studies as it relates to water infiltration. We did identify problems with the quality assurance methods that were used. And because we want to ensure that we proceed in the most responsible way possible, we are going to redo those models and resubmit those as part of our license application.

MR. BURGESS. Now, if I understand the concept correctly, the recycling program and Yucca Mountain are proceeding along parallel tracks, but they are interdependent in that you already have spent nuclear fuel that will basically take up the space that is available at Yucca Mountain, and without the reprocessing program, another Yucca Mountain would be necessary fairly quickly, is that correct?

MR. SELL. The Nuclear Waste Policy Act put a 70,000 metric ton limit on Yucca Mountain, and it is our projection that by roughly 2010 or 2012, the Yucca Mountain, as specified under the act, will be fully subscribed. That is one of the issues that we may seek to address in the legislation. And we also believe that if we can, over the coming decades, commercialize the recycling technologies, that would allow us to greatly optimize the use of that one Yucca Mountain so that it would serve and perhaps permanently defer a decision on a second repository.

MR. BURGESS. Is, now, a country like France that utilizes a good deal more nuclear power than the United States, do they reprocess their spent fuel?

MR. SELL. France reprocesses as well as the United Kingdom, Japan, Russia, China, most of the other great nuclear economies all have commercial reprocessing activities.

MR. BURGESS. Is that technology developed in France or was it developed in this country?

MR. SELL. All of the reprocessing technology that is used around the globe today is based on the PUREX method which was developed here in the United States as part of our weapons program to produce and separate plutonium.

MR. BURGESS. Is there an economy to be found by going for off-the-shelf technology that is already utilized in other countries that is working, or is there a downside to pursuing that?

MR. SELL. In our judgment, Mr. Burgess, the commercial reprocessing technologies that are used around the globe today are not preferable because they separate pure civilian plutonium, which represents a significant proliferation risk. And so what the President has proposed is that we work to develop the next generation of recycling technologies that will be much more proliferation resistant than the types of reprocessing technologies that are used around the globe today. And that is one of the reasons we want to work in partnership with the other nuclear economies, to benefit from the advances that they have made, but also to work with them in phasing out the existing PUREX-based reprocessing technologies which, in our judgment, present a significant proliferation threat.

MR. BURGESS. Is the discussion with India, would that be for the proliferation resistant reprocessing?

MR. SELL. The announcement that was made with India, they have made a commitment. They never signed the Nonproliferation Treaty. They have made a commitment to put a great number of their nuclear facilities under safeguards, which is a considerable improvement. And in return, we have made a commitment to change the Atomic Energy Act so that we can engage in nuclear cooperation, including fuel cells with India and to strengthen the strategic relationship and quite frankly, the economic relationship between our two countries. As it exists today, the agreement between the United States and India does not relate specifically to recycling or reprocessing.

MR. BURGESS. Mr. Chairman, you have been very indulgent. I will yield back my time.

MR. HALL. I thank the gentleman. The Chair recognizes the Chairman of the Energy and Commerce Committee, Joe Barton, for as much time as he wants to consume.

CHAIRMAN BARTON. Well, I will take five minutes, Mr. Chairman. Thank you. Thank you, Mr. Deputy Secretary, for being here. First, I want to make sure that my opening statement is put in the record.

MR. HALL. Without objection, sir.

[The prepared statement of Hon. Joe Barton follows:]

PREPARED STATEMENT OF THE HON. JOE BARTON, CHAIRMAN, COMMITTEE ON ENERGY
AND COMMERCE

Thank you Mr. Hall and Mr. Boucher for having this hearing on the status of Yucca Mountain. As you know, I feel very strongly about this issue and remain committed to carrying out our nation's nuclear waste policy and building a repository at Yucca Mountain.

Our nation has invested 23 years and \$9.0 billion into a repository to solve our nuclear waste problem. The amazing part is, as time passes, this project gets further and further behind. Yucca Mountain was supposed to open in 1998, isn't open yet, and won't open by 2010. With DOE amassing more liability costs with each passing year, it's time we get an explanation as to where DOE's priorities are.

The license application is four years overdue and DOE has no projection of when it will be submitted. DOE also has no projection of when the repository will open. DOE has been working since last August on a legislative proposal to resolve the repository's outstanding issues, but hasn't produced it yet. In the meantime, DOE has been focused on developing their GNEP proposal that represents a fundamental shift in nuclear waste policy, without any warning to Congress.

In 2007, payments into the Nuclear Waste Fund will be approximately \$750 million. The Nuclear Waste Fund will earn over a billion dollars in interest, and the balance in the Fund will be nearly \$20 billion. Yet in the Administration's budget for FY'07, only \$156 million will be used for the repository program. However, that same budget also proposes \$250 million for the new GNEP proposal with funding requests expected to top \$700 million for FY'08 and '09. Let me be clear – I oppose tapping the Nuclear Waste Fund for GNEP activities.

I encourage DOE and the administration to keep a strong focus on Yucca Mountain. If Congress needs to take further action to get the Yucca Mountain project set once and

for all, I and many bipartisan Members of this Committee are ready to work with you. Personally, I'm willing to tolerate this pursuit of the GNEP dream, but not at the expense of a nuclear waste repository. CEOs and boards are watching, waiting for a signal that the executive and legislative branches will do their part. Until we send that signal, we may not see any new plants built. I know you share that goal, so let's give confidence that the waste issue is solved.

CHAIRMAN BARTON. Okay. Mr. Deputy Secretary, I think you know that the last several years the government has paid about \$140 million or \$141 million dollars in settlement claims because of the Department of Energy's inability to dispose of the existing commercial spent fuel. Do you have an idea or an estimate of what will be paid over the next five years for these claims?

MR. SELL. As far as damages claims as a result of not taking the waste, I do not have an exact estimate, but I would like to provide the best information I have for the record.

CHAIRMAN BARTON. Well, we would like to have that estimate and we would also like to have the Department's proposal on how to reimburse the Judgment Fund, and we would also like to know where these costs are reflected in the President's Budget.

MR. SELL. Mr. Chairman, under the existing law or operations of the Judgment Fund, payments out of the Judgment Fund are not reimbursed by the Department of Energy. The Judgment Fund is handled separately from our budget and I believe that is the way it will continue to be handled.

CHAIRMAN BARTON. Who is responsible for the Judgment Fund if not the Department? Where is the money coming from?

MR. SELL. Ultimately, the money comes from the taxpayers.

CHAIRMAN BARTON. No, I mean, but what agency?

MR. SELL. I believe, Mr. Chairman, the Judgment Fund is administered by the Department of Justice.

CHAIRMAN BARTON. So there is no Department of Energy role in requesting funds for that fund?

MR. SELL. That is correct.

CHAIRMAN BARTON. Okay. I am going to be sending, in the very near future, a written request to you and Secretary Bodman to prepare a life cycle estimate for comparing our existing waste policy based on Yucca Mountain and this new GNEP reprocessing approach. I am skeptical of GNEP, but I at least think we ought to compare apples and apples when we look at the cost. Do you have a comment on that or do you just want to wait until you get my letter?

MR. SELL. Well, I will look forward to your letter, but if I may, I would like to make a comment. This is something that we looked seriously at and it affected our thinking as we were seeking to develop

the policy and make a judgment as to whether this was something that was worth pursuing. We think it is absolutely worth pursuing particularly for the potential nonproliferation benefits that it can yield. But even on a cost basis, we found that if the cost of uranium fuel is fully loaded with the ultimate cost of disposal, we think, you know, uranium fuel costs less than \$100 per kilogram, but we think the disposal cost is at least \$600 per kilogram, and we expect the commodity cost of uranium to increase substantially as the demand for it increases with an expansion of nuclear power. So in a world with many more nuclear power plants than we have today, we think that the cost of our once through policy, with disposal costs loaded in, is no less than what the cost of a recycling program would be. We think they are very comparable from a cost standpoint and we look forward to elaborating on that in our response to your letter.

CHAIRMAN BARTON. Okay. Somebody may have asked this, but when do you expect to present to this committee and to the Congress a legislative proposal on Yucca Mountain, on funding and maintaining that program?

MR. SELL. As Secretary Bodman indicated last week, we hope to have that legislation to the Congress within a month.

CHAIRMAN BARTON. Within a month, okay. Well, we always are glad to see you and we look forward to working with you on a lot of these issues. And with that, I am going to yield back, Mr. Chairman. Thank you for holding this hearing.

MR. HALL. I thank Chairman Barton for yielding back. And one of the benefits of being Chairman is that all the questions that I want to ask have been answered pretty well. But the purpose, of course, of the hearing is to gain an understanding of the current situation and connections to the GNEP proposal, reasons for further delays, and issues that might require legislation, and I think you have covered those pretty well. You have adequately told us of the importance of Yucca Mountain, and I think everybody realizes that pretty well. The benefits of GNEP for the Yucca Mountain Project is something we might want to discuss for just a moment or so. And if GNEP is successful, will there be a need for Yucca Mountain? I think that almost speaks for itself because, physically, Yucca Mountain's capacity is limited by heat generation from nuclear waste. If their capacity is limited by that, then spent fuel can be reprocessed to reduce waste volume and remove the heat-generating elements, then Yucca Mountain's capacity might increase significantly, I am told, and I think that is basically in your testimony.

Another question I have heard asked is, it is not my question, but I have heard it, is GNEP is evidence that the Administration is backing away from its commitment to Yucca Mountain, and it seems to me that it

is certainly not backing away from it, that it is lending R&D to it to make it more adequate and maybe to prevent having additional Yucca Mountains. Do you want to enlarge on that in any way? In other words, it is not a slow clear give to those that oppose Yucca Mountain. We don't want to ever go down that road. We have got to finish it, we have got to complete it, and if you have any remarks to make about what GNEP will do for Yucca Mountain, I would like to hear that and that will be the only question I have.

MR. SELL. You have said it and I will briefly elaborate on it. We regard, really, GNEP as an opportunity to develop the recycling technologies that will allow us to optimize, from a waste management standpoint, it will allow us to optimize the use of the Yucca Mountain geologic repository for decades to come and perhaps even beyond the century. But those technologies themselves will take decades to get to commercialization, and we need to have success on Yucca Mountain much, much quicker than that so that we can start moving fuel there and quite frankly, earn the confidence from the American people, the taxpayers, and the nuclear industry, that we can meet our obligations to take fuel under the Nuclear Waste Policy Act. So Yucca Mountain remains the top and quite frankly, kind of the greatest remaining uncertainty as it relates to nuclear power in the United States, and we intend to work over the course of the next three years to resolve that uncertainty.

MR. HALL. Thank you for your testimony and thank you for your time and thank you for your service. All right, with that, we are adjourned.

[Whereupon, at 4:33 p.m., the subcommittee was adjourned.]

RESPONSE FOR THE RECORD BY THE HON. CLAY SELL, DEPUTY SECRETARY, U.S.
DEPARTMENT OF ENERGY

QUESTIONS FROM CHAIRMAN HALL

Legislative Proposal

- Q1. Secretary Bodman stated on March 9th that the Administration would propose legislation to address Yucca Mountain "within a month." According to press reports, Secretary Bodman made a statement on March 28th that he is "...hopeful we will get it out by the end of April..." When will the Administration propose legislation to the Congress?
- A1. The Administration's legislative proposal, the "Nuclear Fuel Management and Disposal Act" was submitted to Congress on April 5, 2006.

- Q2. If Congress does not act on your legislative proposal this year, what specific activities would be impacted? How would the schedule for commencement of repository operations be affected?
- A2. The program activities identified in the President's FY 2007 budget are not contingent on the passage of legislation. The opening of the repository will be dependent on a number of factors, including when the license application is submitted, how long it takes to receive construction authorization and a license amendment to receive and possess waste on site, the level of funding available, and other factors including many that are outside the control of the Department. The legislative proposal contains a number of provisions, to facilitate the licensing, construction and operation of a repository at Yucca Mountain. In particular, land withdrawal is a regulatory prerequisite for issuance of a license.
- Q3. Legislation has been proposed that would give DOE the authority to take title to commercial spent fuel at utility sites and store it there indefinitely. What is the Administration's position?
- A3. I understand that Senators Reid and Ensign have proposed legislation to authorize DOE to take title to spent nuclear fuel at utility sites as a way to reduce the Government's liability for its delay in disposing of spent nuclear fuel and resulting money damages in that litigation. However, because the Government would accept liability and responsibility for commercial reactor waste on privately owned sites regulated by the Nuclear Regulatory Commission (NRC), taking title to all spent fuel at all 72 reactor sites in the Nation within five years would be substantially more costly to the Government than paying out delay damages. For example, removing all five-year cooled fuel from spent fuel pools could cost as much as \$6 billion over the next five years, would expose nuclear plant workers to needless radiation exposure and would provide no increase in safety. Moreover, the proposed legislation would further postpone the day when the Department begins to fulfill its responsibilities to take and dispose of commercial spent fuel currently located at reactor sites around the country.
- Q4. What issues are being considered in the Administration's Yucca Mountain legislative proposal?
- A. Will it have provisions related to the GNEP program?
- B. Why would legislation be necessary to address these issues?
- A4. The Department's legislative proposal, the "Nuclear Fuel Management and Disposal Act" was submitted to Congress on April 5, 2006. It does not contain provisions related to the Global Nuclear Energy Partnership (GNEP) initiative.

Capacity of Yucca Mountain

- Q5. Yucca Mountain's current capacity is limited by law to 70,000 metric tons.
- A. Based on technical factors, what is the physical capacity of Yucca to accommodate spent fuel?
- B. Is this physical capacity adequate to directly dispose of all the spent fuel from the existing fleet of nuclear plants?

C. Is this physical capacity adequate to directly dispose of spent fuel from any new nuclear plants that might be built?

A5. The environmental impact statement (EIS) for the Yucca Mountain repository evaluated the cumulative effects of disposing of approximately 120,000 metric tons of spent nuclear fuel and high-level waste at Yucca Mountain site. The physical capacity of Yucca Mountain has not been fully assessed; however the Department believes the capacity may be significantly greater than the amount analyzed in the EIS. As such, the physical capacity of Yucca Mountain is adequate to dispose of all the waste that currently exists, and would be sufficient for the disposal of all the spent nuclear fuel and high-level waste that is expected to be generated in the future from the existing fleet of nuclear plants. The ability of Yucca Mountain to dispose of spent fuel from new plants will be dependent on the number of new nuclear plants developed in the future and the results of further site characterization activities in other potential emplacement areas within Yucca Mountain.

Q6. To what extent will the required report on the need for a second repository be shaped by progress on GNEP? How much more are we likely to know on the prospects for success in this technology development by the time the report is issued?

A6. As required by the Nuclear Waste Policy Act, the Department of Energy is to submit a report on the need for a second repository between January 2007, and January 2010. The Department is currently in the planning phase for the development of that report. The report will address the technical progress of GNEP technology development at the time of its issuance. Given the timetable for determining the feasibility of the GNEP technologies, it is unlikely that the report could assume the commercial deployment of those technologies in the near term. On the other hand, removal of the 70,000 metric ton limitation would have a major effect on the need for a second repository in the near term.

Q7. Please list the amounts and types of defense waste and spent fuel planned for disposal in Yucca Mountain. Please list all other defense waste and spent fuel that requires disposal in a geologic repository that exceeds the current allocation for Yucca Mountain.

A7. The repository is being designed to accommodate 7,000 metric tons of spent nuclear fuel produced from the Department of Energy weapons production and Department of Navy research and test reactors, and naval nuclear propulsion programs and vitrified defense high-level waste from the reprocessing of spent fuel.

The Department's total inventory is approximately 13,000 metric tons heavy metal, comprised of around 2,500 metric tons heavy metal of spent nuclear fuel, including 65 metric tons of naval spent fuel and approximately 10,500 metric tons of DOE high-level waste.

The Department's ability to dispose of its high-level radioactive waste currently is constrained by the provisions in the Nuclear Waste Policy Act that imposes a 70,000 metric ton limit and requires the tonnage of the high-level radioactive

waste to be based not on the actual volume of waste but rather on the volume of the spent fuel from which it was generated.

License Application

- Q8. What impact will the GNEP program have on the content and filing date of Yucca Mountain license application?
- A8. The GNEP initiative is a separate activity within the Department and is not expected to have any impact on the initial Yucca Mountain license application. If the advanced technologies that are being considered under the GNEP program are proven feasible and deployed, DOE will take appropriate action to revisit the license granted by NRC to accommodate the waste generated by GNEP.
- Q9. In the past year, a decision was made to redirect the approach taken to handling fuel at the repository to a “clean” approach utilizing a single canister for transportation, aging, and disposal (TAD). Please explain this new approach. What impact has this redirection had on the timing and cost of license review, program construction, and operations? How does it differ from the Department’s previous failed attempt to use Multi-purpose Canisters?
- A9. The new clean-canistered approach is cleaner, simpler, and safer. Workers at the Yucca Mountain site will be handling primarily canistered waste, not individual fuel assemblies as previously planned. These canisters will provide workers with another contamination barrier. For example, when routine maintenance is required in the canistered operating facilities, workers will not have to deal with radiological contamination as they would with individual fuel assembly handling operations.

The Department anticipates that it will be able to announce a schedule for submission of the license application this summer after we have considered what changes will be needed in the license application to take the canistered approach into account. This re-direction was not the cause of the delays. Additional time for the development of the license application is needed to address a number of issues, including the expected issuance of the Environmental Protection Agency standards, actions to improve the quality assurance of the Program, and to ensure the license application is developed to the degree required for docketing by the NRC. The cost of re-directing the program to the canister approach has been minimal as compared to the cost savings that can result in simpler operations over the 40 years of operations at the repository.

The opening of the repository will be dependent on when the license application is submitted, how long it takes to receive construction authorization and then a license amendment to receive and possess, the level of funding available, and a number of other factors.

We believe the new approach represents a technically simpler and safer operation. A similar initiative in the mid-1990s, referred to as the multi-purpose canisters (MPC) approach, was discontinued as a result of budget reductions.

Q10. Last year, the NRC denied certification of the Licensing Support Network. What steps are being taken to address this situation? When will the Network be ready for certification?

A10. After NRC rejected the certification of the LSN in August 2004, the Department took several actions. First, a large archive of emails from inactive and external users was reviewed, and relevant documents were added to the LSN collection. Second, we reviewed documents that had been designated as privileged to ensure their proper classification and we removed a large number from the privileged category. Third, we continued our processes to collect and identify relevant documents that are required to be produced in the LSN in anticipation of a new certification.

The LSN is currently being kept up to date through monthly submittals of relevant documents. The date for the LSN recertification has not been finalized, however, NRC regulations require the Department to certify the LSN at least six months prior to submittal of the license application.

Q11. Last year, in preparation for certification of the Licensing Support Network, several emails from USGS employees indicating that proper Quality Assurance procedures had not been followed for their research on water infiltration into the repository. What actions are being taken to verify or recreate the data and models that they worked on? When will that work be completed? What is being done to improve quality assurance procedures and ensure adherence to those procedures?

A11. The U.S. Geological Survey emails, while not directly involving data collection and technical work, have caused the Department to review the work contained in two reports, *Simulation of Net Infiltration for Present-Day and Potential Future Climates* and *Analysis of Infiltration Uncertainty*, which currently support the Total System Performance Assessment for the license application.

The Department has conducted an evaluation of the potential technical impacts resulting from questions raised by the emails. The *Evaluation of Technical Impact on the Yucca Mountain Project Technical Basis Resulting From Issues Raised by E-mails of Former Project Participants* report concluded that, while the emails do not suggest a misrepresentation by certain individuals of the underlying science, they appear to imply circumvention and/or misrepresentation of compliance with Yucca Mountain Project quality assurance requirements. Consequently, we have implemented remedial actions to address both potential technical and quality assurance issues associated with the supporting data, implementing software, and process models called into question.

The Department has tasked Sandia National Laboratories to review the existing infiltration model and to prepare a new model. After Sandia completes these tasks, its work will be independently checked by experts outside the Department. We have been very clear that it is vital to properly carry out this work, and we will take the time necessary to do so.

- Q12. Please update the Committee on the efforts by the EPA and the NRC to issue an updated radiation standard for the repository.
- A. Is DOE confident that Yucca Mountain can meet the revised standard?
 - B. How will the ultimate resolution of the radiation standard impact the licensing process and the repository's design, cost, and schedule?

- A12. The Environmental Protection Agency (EPA) proposed rule applies a sensible technical approach and is appropriately tempered by reasonable policy judgments such as the inclusion of a reasonable expectation test. The proposed EPA standard beyond 10,000 years is equal to, or lower than radiation doses that are routinely experienced by millions of people **today** based on where they live or what they do. If the revised standard proposed by EPA is codified as proposed the Department is confident that the Yucca Mountain repository can meet the proposed revised standard. Of course, demonstrating regulatory compliance with a standard hundreds of thousands of years in the future will be a first of a kind exercise for both NRC and DOE and is likely to require the expenditure of considerable time and resources by both entities.

The Department expects to have a schedule for submission of the license application later this summer after we have had a chance to review and incorporate proposed design changes for the clean-canistered approach to fuel handling facilities. This schedule will reflect the estimated time needed to address a number of issues, including for example, incorporating the final EPA standard. While the revision of the EPA standard has had an impact on the schedule for submitting the license application, the Department does not expect that the revised standard will necessitate design changes or the incurrence of any significant additional costs other than those associated with dealing with contentions on the post 10,000 year period in the licensing proceeding.

- Q13. How is DOE preparing to address the rigors of the NRC license review process? What licensing expertise does DOE currently have within the OCRWM?

- A13. As the Department continues to develop the repository design, safety analysis, and license application, it is also developing plans for defense of the application in Atomic Safety and Licensing Board hearings and Nuclear Regulatory Commission (NRC) reviews. This planning includes identification of our expert witnesses and preparation of information that may be needed to respond to contentions raised by other parties to the licensing proceedings. Prior to submitting the license application, the Department plans to have in place procedures and processes to respond to NRC's requests for additional information once the license application is submitted. Since the NRC staff anticipates only an 18 month review period prior to the hearings, the Department needs to be able to respond to Requests for Additional Information rapidly and comprehensively. A thorough legal and regulatory review process, combined with timely interactions with the NRC during the pre-application period, will help the Program develop a license application that the NRC can docket, review and adjudicate in the three year period required by the Nuclear Waste Policy Act.

The Department currently has staff, both Federal employees and contractors with experience in the licensing of nuclear facilities before the NRC. In addition, DOE has retained the services of an experienced law firm with extensive experience in nuclear facilities licensing and NRC regulation.

Management

- Q14. The Nuclear Waste Policy Act requires the submission of Project Decision Schedule to be updated as appropriate. In light of the many changes to the program in the last few years, when does DOE plan to submit a revised Project Decision Schedule?
- A14. We are working on an update of the Project Decision Schedule and plan to complete it in FY 2007.
- Q15. Last week, Secretary Bodman said that DOE has begun its evaluation of the need for a second repository, an evaluation that DOE is required to present to Congress beginning in 2007. If the Department has to begin looking at a second repository, which sites will you consider? Please provide a list of those candidate sites for the record.
- A15. The Department will develop a report between 2007 and 2010 on the need for a second repository, as required by the Nuclear Waste Policy Act. Potential identification of sites is premature until the report on the need for a second repository is submitted to the Congress and a decision is made whether to proceed with a second repository program. However, it is reasonable to assume that the Department would initially look at the 21 states considered for the first or second repository during the early 1980s. These states include: Connecticut, Georgia, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Vermont, Virginia, Washington and Wisconsin.
- Q16. When does the current contract for the repository program expire? What are the Department's plans for re-competing that contract?
- A16. The base period for the contract with Bechtel SAIC expired April 1, 2006. The contract includes options for up to five one-year extensions. The Department exercised the first one-year option (through March 31, 2007) and is considering exercising the second one-year option (April 1, 2007, through March 31, 2008) to ensure completion of critical in-process work related to the license application submittal. The acquisition strategy for work beyond March 31, 2008, is being evaluated by the Department to determine the best path forward, including competition.
- Q17. In the last two years, the Federal Government paid \$141 million in claims or settlements resulting from DOE's inability to dispose of commercial spent fuel. How much do you estimate will be paid over the next five years? Since these costs are being paid from the Judgment Fund, will DOE be required to

reimburse that Fund? Where are these costs reflected in the President's Budget?

- A17. The amount of damages due utilities from the Government is currently a matter in litigation. However, the Department has estimated that the Government's liability for delaying the acceptance of spent fuel from 1998 to 2010 is between \$2 billion to \$3 billion. For each year that the Yucca Mountain is delayed beyond 2010, the Government's liability could be up to \$500 million per year in costs that the commercial utilities will incur for the construction and maintenance of storage on their sites. As the Department cannot predict when these costs will be paid either for a court judgment or for a settlement, the Department cannot quantify what portion of this liability will be paid over the next five years. Funds paid to utilities to settle litigation against the Government for the Department's delay came from the Government's Judgment Fund at the Department of the Treasury, which has a permanent indefinite appropriation and which, under current law, the Department of Energy is not required to reimburse.
- Q18. DOE has suggested that their liability for failing to accept commercial spent fuel beginning in 1998 may cost \$500 million per year. Private Fuel Storage was recently licensed to build an independent spent fuel storage facility in Utah and estimates that they could serve DOE's needs for about \$60 million per year. Is DOE exploring this possibility? If not, why not?
- A18. The Nuclear Waste Policy Act (NWPA) directs the Department to develop a permanent geologic repository for spent nuclear fuel at Yucca Mountain. Because PFS is a privately funded facility operated by the private sector outside the scope of the NWPA, the statute prohibits DOE from providing direct funding to that entity. Additionally, the facility does not address the Nation's need to permanently dispose of radioactive waste.
- Q19. Under the Nuclear Waste Policy Act, new nuclear plants must sign standard contracts with DOE for the disposal of spent fuel before they can receive a license from the NRC. Under what circumstances and conditions would DOE be able to sign Standard Contracts for the disposal of spent fuel from new reactors, considering the liability the Department faces for failure to execute their liability under the existing generation of contracts?
- A19. The Department is prepared to begin discussions with interested utilities to develop the terms and conditions of a new contract for the disposal of spent nuclear fuel from new commercial nuclear power reactors. The Department is confident that it will be able to successfully complete these activities to support the licensing of new nuclear power plants. The Department expects any new contract would take into account that acceptance of spent fuel would be dependent on removal of the 70,000 metric ton limitation or construction of a second repository.
- Q20. I understand that Secretary Bodman has publicly stated concern about whether the existing mil per kilowatt-hour that utilities pay to fund Yucca Mountain may NOT be adequate to cover the costs of building the repository. What is the

basis for that statement? When will DOE planning to update its Total System Life Cycle Cost Estimate?

- A20. While the project is still in the design phase and annual spending does not exceed the net income into the fund (fees plus interest), an increase to the mil levy on the production of electricity from nuclear power does not seem warranted or justified. The Nuclear Waste Fund currently has approximately an \$18 billion corpus which continues to grow every year. In FY 2006, the Fund took in \$736 million in the mil levy fee as well as \$849 million in investment income (for a total of \$1.585 billion) while only \$148.5 million was appropriated from the Fund by Congress for use at Yucca Mountain. This means that there was over \$1.4 billion generated for the Fund in FY 2005 but not spent.

The program is planning to develop new cost estimates once the Department selects new designs for surface facilities that incorporate the clean-canistered approach and that are approved by the Energy Systems Acquisition Advisory Board. Decisions on the designs are expected this summer.

- Q21. Administration witnesses have consistently testified that it is important to move forward with the Yucca Mountain project regardless of the outcome of the Global Nuclear Energy Partnership (GNEP). One of the reasons relates to defense waste.

- A. Under current schedules, when will defense waste and spent fuel be ready for shipment to the repository?
 B. If the repository is not built, how will this waste be handled?

- A21. (A) Each Department of Energy site (Hanford, Savannah River, and Idaho National Laboratory), which expects to ship spent fuel or high-level waste to the repository, will place the waste into disposable canisters. These canisters are designed to be transported to the repository and accommodate disposal in waste packages at Yucca Mountain. Currently Savannah River has high-level waste that has been vitrified, but Hanford and Idaho have not yet vitrified their high-level waste. Current plans developed by the Office of Environmental Management for each site are summarized in the table below.

<u>SITE</u>	<u>Date of Capability to Ship HLW Canisters</u>	<u>Date of Capability to Ship SNF Canisters</u>
Savannah River	2012	2015
Hanford Site	2020	2018
Idaho National Lab	2022	2015

- (B) If a repository were not built, the waste would continue to be stored at the current sites.

- Q22. The Department has previously submitted a legislative proposal to reclassify the fees paid into the Nuclear Waste Fund to make those offsetting collections that could only be used for the repository program. If Congress enacted such a reclassification proposal, how much would this accelerate the date for opening the repository?

- A22. The budget requirements to construct and operate the repository are estimated to be between \$1 billion and \$2 billion annually through operations. The Yucca Mountain project is currently funded, on average, at the \$500 million level, of which, on average, is approximately \$200 million from the Nuclear Waste Fund. Without funding reform to encourage full appropriation of the funds generated by the mil levy fee, the Department will not have sufficient funds to construct the repository and related infrastructure in a timely manner and operation of the repository at expected levels will be delayed many years.
- Q23. \$544 million was requested to fund the Yucca Mountain program for FY'07. How much of that funding will be spent within the State of Nevada?
- A23. Approximately \$343 million would be spent in the State of Nevada. This would include funds for State and local government oversight activities, payments equal to taxes, University of Nevada research, our management and operating and other project contractors, and Federal salaries for staff located in Nevada.
- Q24. Please list all circumstances under which DOE has authority to conduct interim storage of nuclear waste and spent fuel.
- A24. DOE has authority under the Atomic Energy Act of 1954, as amended, (AEA) (42 U.S.C. 2075), to accept spent nuclear fuel (SNF) in certain circumstances. Pursuant to this AEA authority, the Department has accepted and stored U.S. supplied foreign research reactor fuel at various DOE sites. DOE has also used this authority to accept for research and development purposes small amounts of SNF such as parts of the Three Mile Island melted reactor core and other damaged SNF. DOE also has accepted commercial SNF under contracts that pre-dated enactment of the Nuclear Waste Policy Act of 1982 (NWP). Enactment of the NWP did not affect the Department's authority to accept and store SNF not covered by the Standard Contract mandated by the NWP. However, in enacting the NWP, Congress did provide a detailed statutory scheme for commercial SNF storage and disposal that, by its specificity, severely limited the Department's commercial SNF storage and disposal options and, in effect, prevents the Department from currently undertaking interim storage of commercial SNF to meet the NWP-imposed disposal contract obligations. Section 135 of the Act authorized the Department to enter into contracts to assist or provide temporary storage of small amounts of SNF until a repository was available. This authority expired in 1990. Section 141 of the Act authorizes the Department to site, construct and operate a Monitored Retrievable Storage (MRS) facility, but restricts DOE's ability to pursue this option by linking any activity under this section to almost unattainable milestones. 42 U.S.C. 10155-10157. For example, before the MRS can be constructed, the Nuclear Regulatory Commission must have issued a construction authorization license for the main repository; until the main repository starts accepting SNF, the quantity of spent fuel stored at the MRS site cannot exceed 10,000 MTUs; after the main repository starts accepting SNF, the total quantity of SNF at the MRS site cannot exceed 15,000 MTUs at any one time, and the MRS cannot be located in Nevada.

Repository Operations

Q25. The Yucca Mountain EIS includes an assumption that the repository will remain open with the ability to monitor waste performance and retrieve it if appropriate for at least 50 and as many as 300 years. What are your current assumptions with respect to this aspect of repository operations?

A25. The Yucca Mountain environmental impact statement (EIS) assumption was based on two considerations. First, Nuclear Regulatory Commission regulations require that the repository must be able to retrieve spent nuclear fuel and high-level waste for a period of 50 years following initial emplacement. Second, the Department desired to ensure that the repository could be physically maintained and monitored to allow future policymakers to decide when to permanently close the repository. At the time the EIS was prepared, the Department believed that up to 300 years was a conservative timeframe.

Considerations such as the costs and technical feasibility of maintaining the underground emplacement drifts for 300 years, and the need to protect the open repository from adversaries, have caused the Department to revise this assumption. Currently, the Department intends that the repository be capable of remaining open for up to 50 years following completion of emplacement of spent nuclear fuel and high-level waste. This will simplify the ability to provide drift stability, reduce the timeframe to protect the spent nuclear fuel and high-level waste while the repository is open, allow the repository to meet thermal limits for emplacement, and reduce the cost of maintaining the facility in an open condition.

Q26. Please describe the improvements to site infrastructure that you plan to accomplish with the FY 2007 request.

- A. Why must this work be done now?
- B. Can all of these site infrastructure activities be undertaken in advance of receiving a license from the Nuclear Regulatory Commission to begin construction of the repository?
- C. Do you have any communication from the NRC stating that position?

A26. In order to assure the safety of the workers and visiting members of the public at the Yucca Mountain site, the Administration plans to make needed safety-related replacements or improvements to the existing infrastructure. Among other things, the Department would be replacing or making improvements to the fire detection, alarm, rail, and ventilation systems, and underground fire fighting capability in the tunnel. These safety-related activities would also involve the construction of three new temporary buildings to replace existing trailers, temporary work shops, and tents.

These safety-related activities would also include removal of the muck pile (the tailings from the excavation of the tunnel) from its current location in order address safety the storm water flooding of the temporary buildings that have been constructed on the muck pile. The muck pile would be used as fill material to support other infrastructure activities such as road construction or repair and pad foundation construction.

The National Environmental Policy Act review for these proposed activities has not been completed, and we have not commenced our formal consultations with the Nuclear Regulatory Commission regarding these proposed activities.

- Q27. Please describe the improvements to transportation infrastructure that you plan to accomplish with the FY 2007 request. Why must this work be done in 2007, considering that the repository is not likely to open before 2012?
- A27. Most of the assets required for safe and secure transportation have long procurement lead times. The design, testing, certification and fabrication of new casks are expected to take five years. In addition, construction of a 300 mile long rail access to the repository will be both expensive and time consuming. The long lead times and high cost of developing the transportation infrastructure are prime reasons for beginning development early and spreading the costs over multiple years. Approximately half of the \$68 million requested for transportation development in FY 2007 is targeted for final design and construction of the rail line to the repository. The other funds are targeted for procuring long lead assets (casks and rail cars) as well as developing the communications, security, routing and emergency preparedness support needed for safe and secure shipments.
- Q28. Are existing laws and regulations governing the transport of spent nuclear fuel and high-level waste adequate to ensure public health and safety during DOE's extensive shipping campaign to Yucca Mountain? How many nuclear waste locations will not be accessible by rail in the timeframe that DOE expects to begin transport to Yucca Mountain? What options exist for those sites NOT accessible by rail?
- A28. The Federal government and nuclear industry have been shipping nuclear material, nuclear waste, and spent nuclear fuel since the early 1950s. In that time, over 3,000 shipments of spent nuclear fuel have been conducted without any harmful release of radioactive material. That safety record is largely due to the stringency of current laws and regulations. In February of this year, the National Academy of Sciences issued a draft report titled, "Going the Distance? The Safe Transport of Spent Nuclear Fuel and High-Level Radioactive Waste in the United States" and stated that "Current international standards and U.S. regulations are adequate to ensure package containment effectiveness over a wide range of transport conditions." The legislation proposed by the Administration is not intended to replace this framework or to change the Department's long standing practice of working with States, Indian tribes and local governments utilizing their expertise to ensure safe and secure transportation and of providing them financial and other assistance, as appropriate. Rather the legislation clarifies DOE can use its authority under the Atomic Energy Act to ensure a single comprehensive framework and identifies the mechanism for dealing with requirements that conflict with this framework. Of the 72 commercial sites from which DOE will ship spent nuclear fuel, 24 do not have direct rail access. There are several options for shipping rail sized casks from these sites, including moving the large rail casks on special "heavy-haul" transporters to nearby rail yards and transferring them to a train for the rest of the journey, or shipping truck sized casks on flatbed trailers in standard legal weight, or permitted overweight, configurations. Another option would

be to load the rail cask onto a barge at sites with navigable water access and use the waterway to ship the load to a nearby railhead. Studies of inter-modal shipment options from sites without rail access to a railhead are being supported by the Department in collaboration with state regional groups.

Q29. Is DOE confident that repository performance is understood in an adequate level of detail to satisfy the rigorous scrutiny of the Nuclear Regulatory Commission's review? Is OCRWM undertaking any additional scientific work to increase understanding of natural or engineered barriers, or radionuclide transport? If so, please describe this work, its current funding level and future projections.

A29. Yes, DOE is confident that after over 20 years of testing and analysis, the repository performance is understood to an adequate level of detail for the Nuclear Regulatory Commission (NRC) to make a determination that a construction authorization can be granted for a repository at Yucca Mountain. When the President recommended Yucca Mountain for development as a repository in 2002, the NRC had issued its notice of sufficiency on November 13, 2001, stating that there would be sufficient information available at the time of a potential license application such that development of an acceptable license application would be achievable. The NRC had reviewed the responses DOE provided to questions on Key Technical Issues and concluded that the responses, and additional information that would be in the license application, would meet the requirements for the licensing process.

Additional work is underway to increase our understanding of how the natural and engineered barriers perform, and how radionuclides might be transported. Both DOE and NRC understand that additional confidence in our estimates of performance will be gained over time as we construct, operate and monitor the repository. NRC requires that DOE have in place a Performance Confirmation (PC) Program to continually evaluate the technical basis for our performance projections. DOE has issued a Performance Confirmation plan and begun the process of migrating long term testing and monitoring activities that started during site characterization into the PC Program. DOE will continue to collect and analyze scientific data related to performance of the engineered and natural barriers from now until closure of the repository.

In FY 2006 funding for postclosure performance activities is approximately \$79 million, this includes funding for Performance Confirmation, as well as funding to extend our current estimates of performance from the 10,000 years in the current NRC regulation to the 1 million years that EPA has proposed in the revision to its standard, to analyze changes resulting from recent design changes, and to support the University of Nevada, and Nye (NV) and Inyo (CA) counties in conducting independent scientific analyses. We plan to continue scientific activities in future years in order to refine our understanding, provide added confidence in our models, and incorporate new information as appropriate. Funding requirements are expected to remain about the same until a construction authorization is issued, and then decrease to about \$30 to \$50 million per year.

Global Nuclear Energy Partnership (GNEP)

- Q30. What is the importance of the Yucca Mountain project to the future of nuclear power?
- A. What are the benefits of GNEP for the Yucca Mountain project?
 - B. If GNEP is successful will there still be a need for Yucca Mountain?
 - C. Isn't GNEP evidence that the Administration is backing away from its commitment to Yucca Mountain?

- A30. Global Nuclear Energy Partnership (GNEP) technologies, when demonstrated, could have a significant positive impact on the Yucca Mountain repository including the reduction of waste volume, radiotoxicity, and heat load.

Successful commercial deployment of GNEP spent fuel recycling technologies, however, is many years, even decades in the future. DOE does not intend to delay fulfilling its obligation to begin consolidating and disposing of the approximately 50,000 metric tons of commercial spent fuel already generated, as well as the approximately 2,000 metric tons being generated each year. DOE plans to proceed with licensing, constructing and operating the Yucca Mountain repository as planned. If GNEP technologies are successfully deployed commercially, DOE will take the necessary steps to make the repository accommodate the changes in the waste stream.

While the potential waste minimization benefits of GNEP on Yucca Mountain could be positive, any changes to the operation of the Yucca Mountain repository would occur only after GNEP technologies have been adequately demonstrated. Today, there will be no changes in the license application under development, and we will proceed with our current plan for the existing waste inventory as well as the waste being generated.

The Administration is not backing way from its commitment to Yucca Mountain. On the contrary, the Government has the obligation to take and dispose of the Nation's waste, and our mission is to provide permanent geologic disposal under the Nuclear Waste Policy Act of 1982. The GNEP initiative is a separate activity within the Department and, as such, does not detract from the Department's commitment to build a repository at Yucca Mountain. A repository will be needed under any fuel cycle scenario.

- Q31. What is the projected cost of the GNEP program over its lifetime?

- A31. The Department's preliminary, order-of-magnitude estimate of costs for the GNEP initiative range from \$20 billion to \$40 billion. This includes the cost of Nuclear Power 2010 and Yucca Mountain over the next ten years as well as the cost of demonstrating integrated recycling technologies. The preliminary, order-of-magnitude costs associated with the demonstration of technologies would be substantially less, and have previously been estimated to range from \$3 billion to \$6 billion over the next ten years to bring those technologies to the point of initial operations. In 2008, the Department will have more refined estimates of the cost and schedule to complete the full 20-year demonstration effort.

- Q32. Your testimony before Senate Appropriations states, “we will be looking for a sizable portion of GNEP costs to be shared by our partners and industry starting in 2008”. What aspects does the Administration envision the industry funding and how much funding would the industry be expected contribute?
- A32. Industry and international partners have significant experience and capabilities that would support various aspects of the GNEP initiative. While specific funding levels have not been set among possible participants, it is anticipated that cooperating on the development of these advanced recycle technologies would enable the U.S. to leverage its investment with fuel cycle partners, increasing the U.S. investment several fold.
- Q33. What are the GNEP funding requirements for FY 2008 and succeeding years? Does the Administration believe that this funding profile can be accommodated within the existing DOE budget? If so, what offsetting reductions in DOE activities is the Administration considering? Considering that both GNEP and the Yucca Mountain programs will require dramatic funding increases in roughly similar timeframes, how can DOE accommodate those competing requirements within its budget?
- A33. The Department is currently developing more detailed cost estimates and work scopes for the GNEP Technology Demonstration Program. The more detailed cost estimates will be used to identify the funding requirements for its implementation.
- DOE expects to request sufficient funding to support GNEP and, in particular, the timely evaluation of the technical feasibility of various technologies taking into account competing priorities and budgets. While no decisions have been made at this stage concerning whether there would be offsetting reductions in other programs, the Department is committed to seeking full and adequate funding for Yucca Mountain programs and has no intention to divert funds from Yucca Mountain programs to GNEP. In particular, the Department believes the Nuclear Waste Fund should be used for its intended purpose and provide the basis for appropriations at levels that will result in beginning operation of the repository at Yucca Mountain as soon as possible.
- Q34. According to DOE’s Global Nuclear Energy Partnership proposal, the United States would provide nuclear fuel services to other countries including the return of spent fuel for reprocessing. Where will the ultimate waste product be disposed?
- A34. We do not envision accepting spent fuel pursuant to the GNEP initiative until there is sufficient advanced recycling capability available in the U.S. At that time, we would have to consider the conditions under which the U.S. could reprocess another country’s spent fuel.
- Q35. Deputy Secretary Sell testified that up to 90% of existing commercial used fuel could be recycled. What is the basis for this estimate?

- A35. The Department's technical experts are confident that a very large percentage of existing or future U.S. inventories of commercial spent nuclear fuel may be suitable for recycling if the GNEP technologies ultimately prove to be successful. Some of the inventory of commercial spent fuel is known at this time to be not suitable for recycle using the separations technology under development by the Department. This inventory includes the Three Mile Island damaged fuel, the graphite fuel from Fort St. Vrain, and other non-oxide-based fuels.

QUESTIONS FROM REPRESENTATIVE ALLEN

- Q1. Mr. Sell, in your written testimony you highlight the Department's intention to move towards a clean canister approach.
- A. Why is it necessary to repackage spent fuel that is already in NRC licensed canisters? What is wrong with the existing canisters?
 - B. Do you intend for this approach to be applied to decommissioned plants?
 - C. If yes, how do you anticipate decommissioned plants transferring spent fuel to new canisters if their facilities are completely closed and in some cases destroyed, except for the existing spent fuel storage containers? How is it logistically possible to make these transfers?
 - D. Do you anticipate that ratepayers will pay the cost of these transfers to new canisters, even at decommissioned plants?
 - E. Will you commit to making the movement of fuel from decommissioned plants a priority, if not first priority, in any scenario where Yucca Mountain becomes operational?
- A1. The Department is moving to implement a clean-canistered approach to spent fuel acceptance at the Yucca Mountain repository. Currently, we are developing the performance specifications for this canister. These specifications will include materials and features that are necessary to provide for the long-term isolation of the waste in the repository. The Department understands that the current generation of dual-purpose canisters, which were licensed by the NRC for storage and transportation of spent fuel, do not incorporate the features required for long-term waste isolation. As such, spent fuel stored in dual-purpose canisters would have to be repackaged prior to disposal.
- The other issues raised by part B through E of your question are currently the subject of ongoing litigation against the Government, and I cannot comment further at this time.
- Q2. Eight members of the New England Delegation sent a letter to Secretary Bodman, dated December 8, 2005, asking him to address what we feel is the Department's failure to live up to its obligation to remove spent nuclear fuel from decommissioned plants in New England. The Secretary's response, dated March 7, 2006, did not even contain the words "New England" in it. It certainly gave no specifics about the Department's plans to remove spent fuel from the region.
- A. Mr. Sell, please describe, in detail, the Department's plan to fulfill its obligation to remove spent nuclear fuel from New England.

- B. Mr. Sell, please provide all pertinent data the Department has on its plans to remove spent fuel from decommissioned plants in New England, including the data and any and all memos and records of discussion that led to the formulation of Secretary Bodman's March 7, 2006 response to the New England Delegation letter of December 8, 2005.
- A2. The Department remains committed to develop the Yucca Mountain repository as expeditiously as possible to allow for the receipt of commercial spent nuclear fuel from commercial nuclear power reactors. The specific issue of priority acceptance of spent fuel from decommissioned reactors raised by your question is currently the subject of ongoing litigation against the Government, and I cannot comment further at this time.

